"A STUDY TO EVALUATE THE EFFECTIVENESS OF GUIDED IMAGERY TECHNIQUE ON DEPRESSION ANXIETY AND STRESS AMONG CANCER PATIENTS RECEIVING RADIATION THERAPY IN ERODE CANCER CENTRE AT ERODE"

By

REGISTER NO: 301331751

Dissertation Submitted to

THE TAMILNADU DR. M.G.R MEDICAL UNIVERSITY

Chennai, Tamil Nadu

In partial fulfillment

Of the requirements for the degree of

Master of Science

In

Psychiatric Mental Health Nursing

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VIVA VOCE:

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ENDORSEMENT

This is to certify that the dissertation entitled **"A STUDY TO EVALUATE THE EFFECTIVENESS OF GUIDED IMAGERY TECHNIQUE ON DEPRESSION ANXIETY AND STRESS AMONG CANCER PATIENTS RECEVING RADITAION THERAPY IN ERODE CANCER CENTRE AT ERODE"** is a bonafide research work by**: 301331751, Nandha College of Nursing Erode** in partial fulfillment of the University rules and regulation for award of M.Sc., in **Mental health (Psychiatric) Nursing** under my Guidance and Supervision, during the academic year 2014-2015.

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-Researcher

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ABSTRACT

The present research was **"A study to evaluate the effectiveness of Guided Imagery technique on depression, anxiety and stress among cancer patients receiving radiation therapy in Erode Cancer Centre, Erode**". It was conducted by **Mr. D.P. JOEL RAJ** in partial fulfillment of the requirement for the degree of Master of Science in Nursing at the Nandha College of Nursing, under the Tamilnadu Dr. M.G.R. Medical University, Chennai during the year 2015.

The objectives of the study were

- To assess the pre test and post test level of depression, anxiety and stress among cancer patients receiving radiation therapy in both experimental and control group.
- To implement and evaluate the effectiveness of guided imagery technique on the level of depression, anxiety and stress among cancer patients receiving radiation therapy.
- To find out the association between the pre test level of depression, anxiety and stress among cancer patients receiving radiation therapy with their selected demographic variables like age, gender, marital status, educational status, awareness of diagnosis and awareness of prognosis.

The following hypotheses were set for the study and all hypotheses were tested at 0.05 level of significance.

H1: Guided Imagery technique will be effective in reducing depression, anxiety and stress among cancer patients receiving radiation therapy.

H2: There will be significant association between the pre test level of depression, anxiety and stress among cancer patients receiving radiation therapy with their selected demographic variables like age, gender, marital status, educational status, awareness of diagnosis and awareness of prognosis.

The conceptual framework of the study was based upon Sister Callista Roy's Adaptation model. The research approach used for this study was Experimental Approach and the research design was "Quasi Experimental Design". 60 cancer patients receiving radiation therapy were selected for this study using purposive sampling technique. Data were collected with the help of Depression, Anxiety and Stress Scale (DASS 21) through interview method. The tool was given to five experts for content validity. This standardized scale's reliability is 0.94. The tamil version of the tool s reliability was checked using test retest method and was found to be reliable (r= 0.9). Pilot study was conducted to find the feasibility of the study and to plan for data analysis. Guided Imagery intervention was given to the experimental group dividing them into 3 groups. Each group containing 10 members were given intervention for 30 minutes everyday for 3 weeks. After 3 weeks post test was done using the same scale for experimental and control group to assess the effectiveness of Guided Imagery technique on depression, anxiety and stress among cancer patients receiving radiation therapy. Descriptive statistics (frequency, percentage, mean and standard deviation) and inferential statistics (paired 't' test, unpaired 't' test and chi-square test) were used to analyze the data and test hypotheses.

The significant findings of the study were:

- In the experimental group the pre test revealed that majority of cancer patients 18 of them (60%) had extremely severe depression, 6 of them (20%) had severe

depression and 3 of them (10%) had moderate depression, 1 patient (3%) had mild depression and 2 of them (7%) had no depression respectively whereas in post test 19 of them (64%) had moderate depression, 9 of them (30%) had no depression and 1 of them (3%) had severe depression and 1 of them (3%) had mild depression respectively. None of them reported extremely severe depression in post test.

- In the experimental group the pre test revealed that majority of cancer patients 17 (56%) had extremely severe anxiety, 6 of them (20%) had severe anxiety and 4 of them (14%) had moderate anxiety, 2 of them (7%) had mild anxiety and 1 of them (3%) had no anxiety respectively but in post test 11 of them (36%) had moderate anxiety, 9 of them (30%) had no anxiety and 6 of them (20%) had mild anxiety and 4 of them (14%) had severe anxiety respectively. None of them reported extremely severe anxiety in post test.
- In the experimental group the pre test revealed that majority of cancer patients 12 of them (40%) had severe Stress, 7 of them (23%) had moderate Stress and 7 of them (23%) had mild Stress, 4 of them (14%) had no Stress and none of them had extremely severe Stress respectively but in post test 26 of them (87%) had no Stress, 3 of them (10%) had mild Stress and 1 of them (3%) had moderate Stress respectively. None of them reported severe and extremely severe Stress in post test.
- In the control group the pre test revealed that Majority of cancer patients 19 of them (63%) had extremely severe depression, 6 of them (20%) had severe depression and 3 of them (10%) had moderate depression, 2 of them (7%) had mild depression respectively but in post test 19 of them (63%) had extremely severe depression, 7 of them (24%) had severe depression and 3 of them

(10%) had moderate depression and 1 of them (3%) had mild depression respectively. None of them reported normal in pre test and post test.

- In the control group the pre test revealed that Majority of cancer patients 21 of them (70%) had extremely severe anxiety, 3 of them (10%) had severe anxiety and 6 of them (20%) had moderate anxiety respectively but in post test 21 of them (70%) had extremely severe anxiety, 3 of them (10%) had severe anxiety and 6 of them (20%) had moderate anxiety respectively. None of them reported normal and mild anxiety in pre and post test.
- In the control group the pre test revealed that Majority of cancer patients 17 of them (57%) had severe stress, 5 of them (17%) had moderate stress and 3 of them (10%) had extremely severe stress, 3 of them (10%) had mild stress 2 of them (6%) had no Stress respectively but in post test majority of the cancer patients 15 of them (50%) had severe Stress, 5 of them (17%) had extremely severe stress, 5 of them (17%) had moderate stress and 3 of them (10%) had mild stress, 2 of them (6%) reported no stress respectively.
- Guided Imagery technique was effective in reducing depression, anxiety and stress among cancer patients receiving radiation therapy. Paired t test was done between pre test and post test scores in experimental group. The obtained 't' value for depression (8.67*), anxiety (7.38*)and stress (7.57*) was significant at 0.05 level.
- There was no significant difference between the pre test and post test mean percentage in control group. Paired t test was done between pre test and post test scores of control group. The obtained 't' value for depression (0.38), anxiety (0.50)and stress (0.47) was not significant at 0.05 level.
- A comparison between post- test scores of depression, anxiety and stress **between experimental and control group** was done. The obtained't' value for

depression, anxiety and stress were 9.93, 9.93 and 11.29 respectively, significant at 0.05 level. Thus it can be concluded that significant reduction of depression, anxiety and stress score in experimental group was due to the effectiveness of guided imagery technique, so the researcher accept the research hypotheses.

- **In experimental group** it is evident that there is significant association exist between depression in cancer patients receiving radiation therapy with the selected demographic variables, such as age (χ^2= 16.48), gender (χ^2=15.15), educational status (χ^2=12.39), awareness of diagnosis (χ^2= 9.79), awareness of prognosis (χ^2= 10.26). For anxiety there was significant association found with the selected demographic variables, such as age (χ^2= 15.89), gender (χ^2= 9.73), educational status (χ^2=12.35), awareness of diagnosis (χ^2= 10.96), awareness of prognosis (χ^2= 12.44). Similarly for stress it is evident that there is significant association exist between stress in cancer patients receiving radiation therapy with the selected demographic variables, such as age (χ^2= 16.18), gender (χ^2= 12.5), educational status (χ^2= 9.89), awareness of diagnosis (χ^2= 11.31), awareness of prognosis (χ^2= 9.94. The table values of these variables are less than the calculated value at 0.05 levels, so the researcher accepts the research hypotheses for these variables.
- There was no significant association between marital status in experimental group and depression, anxiety and stress among cancer patients receiving radiation therapy at $P<0.05$.
- **In control group** it is evident that there is significant association exist between depression in cancer patients receiving radiation therapy with the selected demographic variables, such as age (χ^2= 16.9), gender (χ^2=10.72), marital

status (χ^2= 16.48), educational status (χ^2=12.39, awareness of diagnosis (χ^2= 13.81), awareness of prognosis (χ^2= 10.30). For anxiety there was significant association found with the selected demographic variables such as age (χ^2= 16.19, gender (χ^2= 10.97), marital status (χ^2= 17.07), educational status (χ^2= 12.35), awareness of diagnosis (χ^2= 10.34), and awareness of prognosis (χ^2= 13.89). Similarly for stress it is evident that there is significant association exist between stress in cancer patients receiving radiation therapy with the selected demographic variables such as age (χ^2= 16.45, gender (χ^2= 14.1), marital status (χ^2= 16.6), educational status (χ^2= 12.39), awareness of diagnosis (χ^2= 10.48), awareness of prognosis (χ^2= 10.86. The table values of these variables are less than the calculated value at 0.05 levels, so the researcher accepts the research hypotheses for these variables.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations are

1. Replication of the study could be done with a larger sample to validate and generalize the findings
2. Study can be done with randominisation for better result.
3. The study can be done by maximizing the time period of guided imagery.
4. The study can be conducted to determine the effectiveness of guided imagery on specific types of cancer.
5. The study can be conducted among patients who are terminally ill in hospital and community settings.
6. Comparative study can be done to assess the effectiveness of guided imagery among different groups.

7. The study can be conducted using various research designs.
8. Guided imagery can be applied on the care givers of mentally ill patients to reduce depression, anxiety and stress.

KEY WORDS

Guided Imagery Technique, Depression, Anxiety, Stress, Cancer and Radiation Therapy.

CHAPTER - I

INTRODUCTION

"The natural healing force within each one of us is the greatest force in getting well."

- Hippocrates

The word cancer still conjures up deep fears of a silent killer that creeps up on us without warning. Cancer, evoking such desperation that it has become a metaphor for grief and pain, a scourge straining our intellectual and emotional resources. The numbers are such that each of us will be touched either as a patient, a family member or a friend. There are over 20 million people living with cancer in the world today. The majority live in the developing world.

Gro Harlem Brundtland (2002)

Cancer is a class of diseases characterized by out-of-control cell growth. There are over 100 different types of cancer, and each is classified by the type of cell that is initially affected. Cancer harms the body when damaged cells divide uncontrollably to form lumps or masses of tissue called tumors (except in the case of leukemia where cancer prohibits normal blood function by abnormal cell division in the blood stream). Tumors can grow and interfere with the digestive, nervous, and circulatory systems and they can release hormones that alter body function. Tumors that stay in one spot and demonstrate limited growth are generally considered to be benign. More dangerous, or malignant, tumors form when two things occur:

1. A cancerous cell manages to move throughout the body using the blood or lymph systems, destroying healthy tissue in a process called invasion

2. That cell manages to divide and grow, making new blood vessels to feed itself in a process called angiogenesis.

When a tumor successfully spreads to other parts of the body and grows, invading and destroying other healthy tissues, it is said to have metastasized. This process itself is called metastasis, and the result is a serious condition that is very difficult to treat.

Peter Crosta (2008)

Cancer is associated with significant psychological and social morbidity. Many researchers have reported that mental disorders such as depression, anxiety and delirium occur more frequently in cancer patients to warrant a detailed assessment and clinical intervention.

Iqbal A, Syed (2004)

One in 4 people with cancer have clinical depression. Clinical depression causes great distress, impairs functioning, and might even make the person with cancer less able to follow their cancer treatment plan.

American Cancer Society (2013)

Two hundred fifteen randomly accessed cancer patients who were new admissions to three collaborating cancer centers were examined for the presence of formal psychiatric disorder. Each patient was assessed in a common protocol via a psychiatric interview and standardized psychological tests. The American Psychiatric

Association's *DSM-III* diagnostic system was used in making the diagnoses. Results indicated that 47% of the patients received a *DSM-III* diagnosis. Approximately 85% of those patients with a positive psychiatric condition were experiencing a disorder with depression or anxiety as the central symptom. The large majority of conditions were judged to represent highly treatable disorders.

Journal of American Medical Association

An observational study was done to evaluate detection and treatment of mood and anxiety disorders among cancer patients in a natural setting. One hundred sixty-five patients with cancer, consecutively admitted to the Oncology Division of San Camillo–Forlanini Hospital, were recruited to the study. All patients completed the Hospital Anxiety and Depression Scale (HADS). Out of 45 patients 37 had a mood or anxiety disorder and depressive disorders in 14. This study suggests that including psychiatric expertise in an oncology division is feasible and may lead to improved detection and treatment of psychiatric disorders among cancer patients.

M. Pasquini M.D & M. Biondi M.D (2006)

During the years 2004-2009, 10,153 consecutive patients were routinely screened with the Psychosocial Screen for Cancer questionnaire at two major cancer centers. Patients' mean age was 59 years and 45% were men. Across cancer types, 59.0% of patients showed clinical levels of anxiety. Further, 52.9% of patients reported clinical symptoms of depression. Analyses reported the highest levels of distress at the time point of cancer diagnosis. As expected, women showed higher rates of anxiety and depression, and for some cancer types the prevalence was two to three times higher than that seen for men. In some cancer types emotional distress was inversely related to age. Patients younger than 50 and women across all cancer types revealed either

subclinical or clinical levels of anxiety in over 50% of cases. Findings describe levels of emotional distress after diagnosis. These results inform that cancer patients are most likely in need of psychosocial support.

Linden (2014)

The brain is a highly efficient system that is connected to every cell in your body by billions of connections. Positive thought is essential to producing positive results. Negative thoughts and emotions lower the immune system, while positive thought and emotions actually boost the immune system. Our mind has the power and capability to help influence the body in healing is quite astonishing and at times, it seems unbelievable what can happen with this powerful influence. The connection between the mind and physical health has been well recognized and researched. One among the application of those studies is mentioned as the therapeutic Guided Imagery, which will help us to tap into its powerful influence for cancer treatment and recovery. Guided imagery is a proactive way to deal with negative thoughts and feelings. It's also effective in relieving potential symptoms of depression, such as fatigue, stress, and anxiety. Guided imagery sessions can be brief, which make them easy to incorporate into hectic schedules.

Bennet (2013)

Guided imagery is a gentle but powerful technique that focuses and directs the imagination. It can be just as simple as an athlete's 10-second reverie, just before leaping off the diving board, imagining how a perfect dive feels when slicing through the water. Or it can be as complex as imagining the busy, focused buzz of thousands of loyal immune cells, scooting out of the thymus gland on a search and destroy mission to wipe out unsuspecting cancer cells.

Guided imagery involves far more than just the visual sense and this is a good thing, given the fact that only about 55% of the population is strongly wired visually. Instead, imagery involves all of the senses, and almost anyone can do this. Neither is it strictly a "mental" activity it involves the whole body, the emotions and all the senses, and it is precisely this body-based focus that makes for its powerful impact. For cancer patients, research studies on imagery report that it can relieve nausea and vomiting from chemotherapy, relieve anxiety associated with having cancer, enhance the immune system, help with weight gain, combat depression, and lessen pain.

Belleruth Naparstek (2013)

Imagery is believed to have been used as a medical therapy for centuries. There is recorded evidence that Tibetan monks in the 13th and 14th centuries began meditating and imagining that Buddha would cure diseases. Some say the techniques even go back to the ancient Babylonians, Greeks, and Romans. The Simontons popularized imagery therapies in a best-selling 1978 book titled Getting Well Again. The book described their experiences in treating cancer patients with imagery and other therapies. Currently, imagery is used in clinics at medical centres and local hospitals. It is often combined with other behavioural treatments. Imagery techniques can be self-taught with the help of one of the many books or audio recordings that have been published on the subject. They can also be practiced under the guidance of a trained therapist. Imagery sessions with a health professional may last twenty to thirty minutes.

Cancer.org (2008)

The investigator realized that guided imagery technique has been a useful instrument for depression, anxiety and stress among cancer patients. It is one of the simplest and easiest forms of relaxation. So the investigator felt that helping the cancer patients practice guided imagery would help them to reduce depression anxiety and stress and enable them to cope up with the cancer related psychological problems.

NEED FOR THE STUDY

Cancer is a life-threatening disease that often impacts on a patient's welfare and well-being; attention to these issues is thus an important aspect of comprehensive patient care.

Cancer is a leading cause of disease worldwide. In 2012, there were an estimated 14.1 million new cases of cancer in the world: 7.4 million (53%) in males and 6.7 million (47%) in females, giving a male: female ratio of 10:9.1 The World Age-Standardised (AS) incidence rate shows that there are 205 new cancer cases for every 100,000 men in the world, and 165 for every 100,000 females.

Ferlay J, Soerjomataram I, Ervik M, et al (2013)

It is predicted there will be 23.6 million new cancer cases worldwide each year by 2030, if recent trends in incidence of major cancers and population growth are seen globally in the future. This is 68% more cases than in 2012 (1). **Worldwide cancer incidence statistics**

Cancerresearchuk.org (2014)

A data of cancer patients was compiled from 2004 to 2010 in India. Based on the increasing trends of cancer patients during the last few decades, the numbers of cancer patients have been predicted by the end of 2015 and 2020 in India. These compiled data show that the number of male, female and the total cancer patients in 2004 were 390809, 428545 and 819354 respectively. The number of male and female cancer patients increased continuously up to 2009, with 454842, 507990 and 962832 cases for male, female and total cancer patients, respectively. Similarly, 462408 male cancer patients and 517378 female cancer patients were recorded, with a total number of 979786 patients in 2010. Thus, it is clear that the number of cancer cases has increased gradually with time.

Imran Ali (2011)

Other studies have consistently indicated that these depressive disorders represent common forms of psychological distress experienced by cancer patients (Akechi 2001;Kugaya 2000;Okamura 2000) and are more common in patients with advanced cancer (Bukberg 1984; Kugaya 2000). Thus depression is one of the most widely recognized psychiatric disorders in cancer patients (McDaniel 1995). Depression not only produces serious suffering (Block 2000), but also worsens quality of life (Grassi 1996), reduces compliance with anti-cancer treatment (Colleoni 2000), can lead to suicide (Henriksson 1995), is a psychological burden on the family (Cassileth 1985), and prolongs hospitalization (Prieto 2002). Thus, the appropriate management of depression in cancer patients is critically important.

This study investigated cancer trends in Chennai and predicted the future cancer burden in Chennai and Tamil Nadu state, India, using data on 89 357 incident cancers

from the Chennai registry during 1982-2006, published incidence rates from the Dindigul Ambilikkai Cancer Registry during 2003-06 and population statistics during 1982-2016. In Chennai, the total cancer burden is predicted to increase by 32% by 2012-16 compared with 2002-06, with 19% due to changes in cancer risk and a further 13% due to the impact of demographic changes. The incidence of cervical cancer is projected to drop by 46% in 2015 compared with current levels, while a 100% increase in future thyroid cancer incidence is predicted. Among men, a 21% decline in the incidence of oesophageal cancer by 2016 contrasts with the 42% predicted increase in prostate cancer. The annual cancer burden predicted for 2012-16 is 6100 for Chennai, translating to 55 000 new cases per year statewide (in Tamil Nadu). Breast cancer would dislodge cervical cancer as the top-ranking cancer in the state, while lung, stomach and large bowel cancers would surpass cervical cancer in ranking in Chennai by 2016. In order to tackle the predicted increases in cancer burden in Tamil Nadu, concerted efforts are required to assess and plan the infrastructure for cancer control and care, and ensure sufficient allocation of resources.

Swaminathan (2011)

To investigate the depression and anxiety levels and the factors that affect patients and their relatives with the Beck Depression Inventory (BDI) and State-Trait Anxiety Inventory (STAI) scoring system. 330 patients and 330 relatives of these patients were enrolled in this study in Turkey. The study forms including the questions regarding the patient demographic characteristics, Beck Depression Inventory, and State-Trait Anxiety Inventory were completed during face-to-face interviews by trained interviewers for the determination of the psychological status of the patients and their relatives. According to BDI scale, 96 (29.1%) patients had mild and 60

(18.2%) had severe depression. Seventy-one (21.5%) relatives had mild and 24 (7.3%) had severe depression. Anxiety evaluation was made by STAI scale and a statistical difference emerged between patients and relatives (patients: 44.93±8.8 vs relatives: 43.27±8.5, p=0.015).The depression and anxiety levels were higher in women, in people with low socio-economic level, in people having a time period between diagnosis and participation in the study longer than 6 months, and in people having relapsing disease.

Alacacioglu (2013)

A study was conducted on cancer patients to assess the presence of depression, anxiety and psychological distress in Sydney, Australia. A touch screen computer survey was conducted in four radiation therapy treatment centre waiting rooms. The Depression, Anxiety and Stress Scale was used for the study. A total of 454 patients (70 %) completed the touch screen computer survey. The likely presence of depression (DASS21 - ≥14), anxiety (DASS21 - ≥14) and overall psychological stress (DASS21 - ≥14) was 35, 55.7 and 22 %, respectively.

Maggie MJ (2010)

An explorative study in the division of psychological oncology and palliative care, Dana Farber Cancer institute and Brigham and women's Hospital, Harvard medical school centre for study was to assess the psychiatric disorders in advanced cancer in 100 patients about 50% of patients with advanced cancer meet criteria for psychiatric disorders and anxiety.

Movic M. Blocks (2007)

A descriptive study to examine the prevalence and predictors of depression and anxiety in palliative care patients with cancer in Western Australia and New South Wales. The study included 266 consecutive patients at a range of inpatient and outpatient settings including home care, hospices, and private and tertiary care hospitals in Western Australia and New South Wales. Self-reported anxiety and depression using the Hospital Anxiety and Depression Scale (HADS) at a cut-off score of > or = 8 on each subscale (depression and anxiety) for possible cases, and of > or = 11 for probable cases; a cut-off score of > or = 19 was used for probable combined depression and anxiety. Patients included 200 in WA and 66 in NSW. For the whole sample, 45.8% of patients were possibly depressed and 22.7% probably depressed; 36.9% were possibly anxious and 19.8% probably anxious. About 25% of patients had probable combined depression and anxiety. Logistic regression analyses indicated that past anxiety in the family predicted probable depression, while age, marital status and past depression predicted probable anxiety. Age and past depression predicted probable combined depression and anxiety.

O'Connor M (2010)

Guided Imagery is a technique used by many natural or alternative medicine practitioners as well as some physicians and psychologists for aiding clients and patients to use mental imagery to help with anything from healing their bodies with Cancer guided imagery to solving problems or reducing stress.

Guided Imagery is a therapeutic technique allowing individuals to use their own imagination to connect body and mind to achieve desirable outcomes.

Ackerman & Turkoski (2000)

In a 2005 study two groups of 30 women with breast cancer were studied. Group #1 was given progressive muscle relaxation training (PMRT) and taught to use guided imagery during their 6 months of chemotherapy. Group #2 was treated with chemotherapy alone. The group practicing muscle relaxation and guided imagery, #1 experienced less nausea and vomiting, and they were less anxious, depressed, and irritable than group #2 receiving chemotherapy alone. Six months after treatment ended, group #1 was still experiencing a better quality of life than the group #2.

Korean Study (2005)

A study looked at guided imagery for patients having radiotherapy for breast cancer. The study found that patients who had guided imagery had lower breathing and pulse rates and lower blood pressure. They also had a slightly higher skin temperature which showed that they felt more relaxed. Overall, more than 8 out of 10 participants in the study described the guided imagery sessions as helpful. All of the people who took part said that they would recommend guided imagery to others.

Sierra et.al (2012)

Guided Imagery induces a relaxed state and facilitates cognitive restructuring when 'suggestion' is included as part of the therapy.

Syrjala & Abrams (2002)

A prospective study was designed such that patients receiving Radiation Therapy for breast cancer would meet with an Integrative Oncology Nurse (ION) for a session on Guided Imagery. The goals of the study are to obtain both subjective and objective parameters for documenting patient response to Guided Imagery. Study endpoints include evaluating the impact of GI on patients' stress and anxiety level, and its ability to promote relaxation and improve overall patient satisfaction during RT. The EuroQol-5D questionnaire, a validated tool for measuring health outcomes, is used for acquiring the subjective assessment. Patients complete the EuroQol-5D questionnaire prior to their first GI session (baseline data) and again at completion of Radiation Therapy. The relaxation response is objectively evaluated by recording biofeedback measures that include patient's pulse rate (PR), blood pressure, respiration rate (RR) and skin body temperature, before and after the Guided Imagery session. Patient feedback on their overall experience is collected at the end of the planned RT through a patient satisfaction survey. To date, 18 women have completed the protocol. The median age of the patient's is 57 years, 16 patients had primary breast cancer and 2 presented with locally recurrent disease. With the exception of 1 patient all completed a minimum 3 Guided Imagery sessions with the ION. On the questionnaire, 4/4 patients who expressed nervousness prior to Guided Imagery noted resolution of this emotion. One of 3 patients who reported difficulty sleeping on the baseline questionnaire reported improvement of sleep pattern after GI. In all cases the

parameters measured through biofeedback improved from baseline; median RR decreased from a median of 20 per minute (range, 14-22 per minute) to a median of 18 per minute (range, 12-20 per minute); the skin body temperature increased from a median baseline of 83.7^0F (range, 70-92^0F) to a median of 88.2^0F (range, 75.1-95.5^0F) after Guided Imagery. Over half (56%) described the Guided Imagery sessions as helpful, and 100% of patients would recommend this intervention to others. The interim results are encouraging illustrating a positive impact of Guided Imagery as measured through subjective and objective parameters. We continue to accrue patients on this study. The observations from this study may influence our future recommendations for supportive care intervention and improve the quality of life of patients undergoing a course of radiation therapy.

Serra.D (2008)

Although there's no evidence that guided imagery can directly combat cancer, using guided imagery may be of some benefit to cancer patients, especially in terms of emotional health. This alternative therapy may also help to cope with cancer-related complications as well as the adverse effects of oncology treatments like radiation and chemotherapy.

The researcher felt from his clinical experience that most of the cancer patients are vulnerable to severe depression, anxiety and stress. Hence based upon the above information, the researcher felt that there is a need to create awareness among oncology patients about various aspects of imagery treatment in the reduction of depression, anxiety and stress and to find out, up to what extend it is successive is

reducing depression, anxiety and stress among those patients, by conducting an experimental study among selected cancer hospital in Erode.

STATEMENT OF THE PROBLEM

"A STUDY TO EVALUATE THE EFFECTIVENESS OF GUIDED IMAGERY TECHNIQUE ON DEPRESSION, ANXIETY AND STRESS AMONG CANCER PATIENTS RECEVING RADIATION THERAPY IN ERODE CANCER CENTRE AT ERODE"

OBJECTIVES OF THE STUDY

- To assess the pre-test and post-test level of depression, anxiety and stress among cancer patients receiving radiation therapy in both experimental and control group.
- To implement and evaluate the effectiveness of guided imagery technique on level of depression, anxiety and stress among cancer patients receiving radiation therapy.
- To find out the association between the pre-test level of depression, anxiety and stress among cancer patients receiving radiation therapy with their selected demographic variables like age, gender, marital status, educational status, awareness of diagnosis and awareness of prognosis.

HYPOTHESES

- H1: Guided Imagery Technique will be effective in reducing depression, anxiety and stress among cancer patients receiving radiation therapy.
- H2: There will be significant association between depression, anxiety and stress among cancer patients receiving radiation therapy with their selected demographic variables like age, gender, marital status, educational status, awareness of diagnosis and awareness of prognosis.

ASSUMPTIONS:

- Cancer patients experience depression, anxiety and stress.
- Guided Imagery technique is effective in reducing the level of depression, anxiety and stress among cancer patients receiving radiation therapy.

DELIMITATIONS:

The proposed study is delimited to

1. Cancer patients between the age group of 21 – 80 years only.
2. The sample size of 60 only.
3. Those willing to participate in the study
4. Cancer patients with depression, anxiety and stress only
5. The data collection period is limited to 4 weeks only.
6. Cancer patients receiving radiation therapy at Erode Cancer Centre, Erode.

OPERATIONAL DEFINITIONS:

1. EVALUATE

It refers to making a judgment about the amount, number, or value of something.

In this study evaluate refers to judging the level of depression, anxiety and stress among cancer patients receiving radiation therapy as determined by Depression, Anxiety and Stress Scale (DASS 21).

2. EFFECTIVENESS:

It means producing or capable of producing a desired effect.

In this study it refers to the intended change that occurs after Guided Imagery technique in the level of depression, anxiety and stress among cancer patients receiving radiation therapy as measured by DASS 21 in experimental group

3. GUIDED IMAGERY TECHNIQUE:

The term "guided imagery" refers to a wide variety of techniques, including simple visualization and direct suggestion using imagery, metaphor and story-telling, fantasy exploration and game playing, dream interpretation, drawing, and active imagination where elements of the unconscious are invited to appear as images that can communicate with the conscious mind.

In this study it refers to the technique of visualization and imagination as means of relaxation by listening to verbal commands, to reduce the level of depression, anxiety and stress among 30 cancer patients receiving radiation therapy. Each

patient went through Guided Imagery session daily twice for 30 minutes, for 7 days.

4. DEPRESSION

An alteration in mood that is expressed by feelings of sadness, despair, and pessimism. There is a loss of interest in usual activities, and somatic symptoms may be evident. Changes in appetite and sleep patterns are common.

In this study it refers to a state of intense sadness and negative attitudes towards one's present condition evidenced by dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia and inertia.

***5.* ANXIETY:**

A diffuse apprehension that is vague in nature and is associated with feelings of uncertainty and helplessness.

In this study it refers to the anticipation the client has towards his/her diagnosis, prognosis and the treatment evidenced by autonomic arousal, skeletal muscle effects, situational anxiety and subjective experience of anxious affect.

6. STRESS:

A state of mental or emotional strain or tension resulting from adverse or demanding circumstances.

In this study it refers to emotional pressure experienced by cancer patients due to adverse circumstances highlighted by levels of non-chronic arousal through difficulty in relaxing, nervous arousal and being easily upset/agitated, irritable/over-reactive and impatient.

7. CANCER

Cancer is the uncontrolled growth of abnormal cells in the body. Cancerous cells are also called malignant cells

In this study it refers to a disease caused by an uncontrolled division of abnormal cells in any part of the body

CONCEPTUAL FRAMEWORK

A **conceptual framework** is an analytical tool with several variations and contexts. It is used to make conceptual distinctions and organize ideas.

The conceptual frame work for this study was based on Sister Callista Roy's Adaptation model (1939) which involves four concepts person, nursing, health and environment.

The adaptive system has four components like input, process, effectors and output.

For the present study, the above mentioned components have been modified as follows.

Roy states that the recipient of nursing care may be an individual, a family, a group, a community, or a society. Each is considered as an adaptive system. In this study the focus will be on group (i.e.,) the cancer patients as living system are in constant interaction with their environment (internal and external).

The constant interaction of person with their environment is characterized by both internal and external, change. With this changing world persons must maintain their own integrity i.e., each person must maintain their own integrity. Hence the cancer patients are viewed as an adaptive system.

Effectors refer to the regulator and cognator. These are the subsystems of cancer patients. It is viewed as, acting with adaptive models such as physiological function, self esteem, role function and interdependence. In this study the effects are adaptive models of the cancer patients, which are regulated by physiological and psychological changes gained through the guided imagery technique.

It has input coming from the external environment as well as from internal. In this study assessment of level of depression, anxiety and stress using Depression, Anxiety and Stress scale among cancer patients will be taken as input.

Roy has vitalized the term coping mechanism to describe the control process of the person as on adaptive system. Some are inherited or genetic and other mechanisms are learned.

In this study, guided imagery technique is given to the cancer patients admitted in Erode Cancer Centre for radiation therapy to cope with depression, anxiety and stress.

Output of the persons as a system is the behaviors of the cancer patients. Output behaviors can be both in external or internal. These behaviors may be observed, measured or subjectively reported and become the feed back to the system. Roy states output of the system as either adaptive response or ineffective responses.

In this study the positive or the negative responses to guided imagery technique on the depression, anxiety and stress levels of cancer patients receiving radiation therapy become the output. It can be either positive, reduction in level of depression, anxiety and stress or negative result, no reduction in depression, anxiety and stress. In this case the negative result becomes the feed back, where it must be reassessed and the guided imagery technique is re-administered in the same manner or in a modified way.

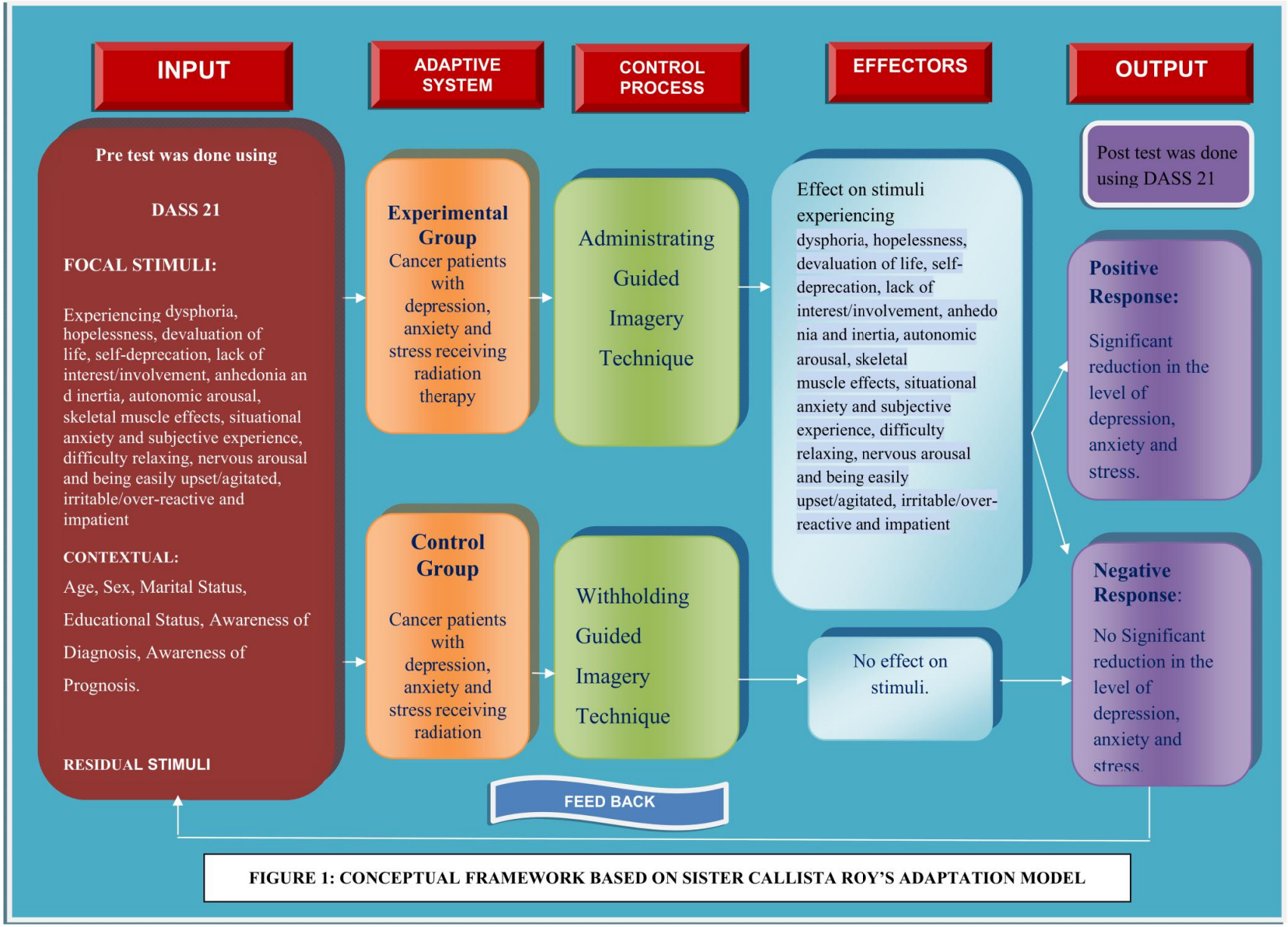


FIGURE 1: CONCEPTUAL FRAMEWORK BASED ON SISTER CALLISTA ROY'S ADAPTATION MODEL

CHAPTER – II

REVIEW OF LITERATURE

A **literature review** is an evaluative report of information found in the **literature** related to the selected area of study. The **review** should describe, summarize, evaluate and clarify this **literature**. It should give a theoretical base for the research and help you (the author) determine the nature of the research.

- libguides.library.cqu.edu.au

A literature review involves the systematic identification, location, scrutiny, and summary of written materials that contain information on the research problem

Polit and Hungler (2007)

A **literature review** is a text of a scholarly paper, which includes the current knowledge including substantive findings, as well as theoretical and methodological contributions to a particular topic. Literature reviews use secondary sources, and do not report new or original experimental work.

Wikipedia (2013)

A review of related research and non research literature was done to broaden the understanding and develop an insight into the related problem under study.

Reviews were categorized under following headings.

1) Literature related to Depression, Anxiety and Stress among Cancer Patients receiving radiation therapy

2) Literature related to the use of Guided Imagery technique on Depression, Anxiety and Stress among Cancer Patients receiving radiation therapy

1. **Literature related to Depression Anxiety and Stress among Cancer Patients receiving radiation therapy:**

Mohamed Torkaman (2014) An experimental study was conducted among 30 women diagnosed with breast cancer in Mahdiyeh Medical Diagnostic Centre in Hamedan, Iran, to study the effectiveness of supportive Group Psychotherapy for Depression, Anxiety and Stress. The Depression, Anxiety and Stress Scale (DASS 42) was used for the study. From the data analysis it was found out that the pre test mean scores for depression, anxiety and stress were 19.2 ± 9.22, 19.28 ± 6.54, 26 ± 7.31 respectively. The results indicated that most of the patients selected had mild to severe form of depression, anxiety and stress.

Yang, Y.et al. (2013) had done a study on "the prevalence of depression and anxiety among Chinese adults with cancer: a systematic review and meta-analysis". A lot of empirical studies have been conducted to evaluate the prevalence of depression and anxiety among Chinese adults with cancer. They aimed to conduct a meta-analysis in order to evaluate the prevalence and odds ratios of depression and anxiety in Chinese adults with cancer compared with those without. Case–control studies assessing the prevalence of depression and

anxiety among Chinese adults with cancer were analyzed. Study selection and appraisal were conducted independently by three authors. The non-weighted prevalence, pooled random-effects estimates of odds ratio (OR) and 95% confidence intervals (CI) were all calculated. Seventeen eligible studies with a total of 3497 subjects were included. The prevalence of depression and anxiety were significantly higher in adults with cancer compared with those without (Depression: 54.90% vs. 17.50%, OR = 7.85, 95% CI = 5.56-11.07, P = 0.000; Anxiety: 49.69% vs. 18.37%, OR = 6.46, 95% CI = 4.36-9.55, P = 0.000), the same situation was also observed in subgroup of control groups, assessment methods and cancer types. Although no difference of depression was observed in studies utilizing clinical diagnosis compared with self-report, the OR of anxiety in adults with cancer compared with those without was higher in studies utilizing clinical diagnosis (OR = 8.42, 95% CI = 4.83-14.70) than self-reports (OR = 5.83, 95% CI = 3.64-9.34). The ORs of depression and anxiety in cancer patients compared with disease group (Depression: OR = 6.03, 95% CI = 4.23-8.61; Anxiety: OR = 4.40, 95% CI = 3.05-6.36) were lower than in those compared with normal group (Depression: OR = 13.58, 95% CI = 6.26-29.46; Anxiety: OR = 15.47, 95% CI = 10.00-23.95). They identified high prevalence rates of depression and anxiety among Chinese adults with cancer. The findings support that the prevalence of depression and anxiety among adults with cancer should receive more attention in Chinese medical settings.

Vimala (2012) **A**n experimental study was planned in Pravara Institute of Medical Sciences, Loni, Maharashtra , India, to assess the level of depression

among the cancer patients, to evaluate the effectiveness of counseling on depression among cancer patients and to compare the level of depression with their selected socio demographic variables. Thirty cancer patients in the age group of 35- 65 years were studied. They were assessed for the level of depression on first day of admission followed by the counseling for five days with 25 - 30 minutes each. The Post-test were carried out on sixth day by using the Zung Self Rating Depression Scale. The Pre-test mean score was 49.8 which shows there was significant level of depression among cancer patients. The pre test mean score was highest among certain sub scales of depression such as difficulty to enjoy things (71.1), trouble in sleeping at night (70.8), difficulty to do things (65.8), Unclear mind (63.3). There was significant association was found with age and type of cancer and the level of depression.

Lijec Vjesn (2012) A study was conducted to determine the degree of anxiety and depression in patients hospitalized at the Department of Oncology of the Mostar University Clinical. The study included 80 hospitalized patients. The Beck's Anxiety and Depression scale was used. The appropriate statistical methods were used to test the collected data. Patients hospitalized at the Department of Oncology had a great degree of depression (exact test, $P<0.001$). A significant degree in the level of anxiety was also found (exact test, $P=0.143$). A mild degree of anxiety was found in the cancer patients older than 60 and a high level of anxiety in the group aged 25-40 (exact test, $P<0.001$) and in highly educated patients (exact test, $P=0.024$). The research

showed that the cancer patients from the younger age group had higher levels of depression (exact test, P<0.001). The highest level of anxiety was found in the patients aged between 41 and 60 (exact test, P<0.001). It was determined that a higher percentage of women (exact test, P=0.034) and patients over 60 years old (exact test, P=0.006) in the group were more depressed.

Maniah ME (2010) A Cross Sectional Study was done to determine coping strategies among thyroid cancer patients with depression and anxiety during radiation therapy. Thyroid cancer patients with confirmed diagnosis who were undergoing out-patient radiation therapy at the Oncology Unit. They were assessed on their socio demographic profiles and clinical history. The Hospital Anxiety Depression Scale (HADS) was used by patients to report anxiety and depression. The Brief COPE Scale was used to assess coping strategies among the patients. Results: One hundred and fifty patients with mean age of sixty years participated in the study. Prevalence for depression was 49.1% and prevalence for anxiety was 44.1%. Conclusion: Thyroid cancer patients undergoing radiation therapy experienced high level of depressive and anxiety symptoms. However different coping strategies were adopted to cope with their illness, radiation treatment, practical and family problems, emotional and physical symptoms.

Tavoli (2009) A prospective study was done in a consecutive sample of patients with gastrointestinal cancer being treated with radiation therapy in Cancer Institute of Tehran, Iran. This trial aimed to study the various

dimensions along with psychological wellbeing in patients with gastrointestinal cancer and to compare these variables among those who knew their diagnosis and those who did not. In all 142 patients interviewed, 52% of patients did not know their cancer diagnosis and 48% of patients were unaware that they had cancer. Results indicated that those who knew their diagnosis showed a significant lower degree of emotional functioning (P=0.014, mean score of 60.3), which shows that they suffered from emotional stress. While those who were unaware about their diagnosis had a better emotional functioning.

Lohsy et.al (2009) A Clinical trial on 147 women diagnosed with breast cancer was conducted at University Malaya Medical Centre. The study examined the relationship between depression, anxiety and stress before and after a patients self management intervention in a cohort of women diagnosed with breast cancer. Depression, Anxiety and Stress Scale (DASS 21) was used for the study. The study findings revealed a mean score of 12.67 for stress, 9.13 for anxiety and 9.28 for depression. It can be inferred from the findings that major of the patients participated in the study were suffering from moderate to severe level of stress, anxiety and depression.

Movic M. Blocks (2007) conducted an explorative study in the division of psychological oncology and palliative care, Dana Farber Cancer institute and Brigham and women's Hospital, Harvard medical school center for study was to assess the psychiatric disorders in advanced cancer in 100 patients about

50% of patients with advanced cancer meet criteria for psychiatric disorders and anxiety. Effective communication involves active listening, exploring, emotion and meaning, issues when relevant. Treating psychiatric conditions improves quality of life in patients with advanced cancer. Oncologist play a key role in screening for psychiatric disorders, initiating first-line treatment for anxiety and communicating with patients and caregivers about prognosis and end of life issues.

Maulika (2006) A study was conducted to find out the patterns of psychological disturbances among cancer patients receiving radiation therapy in Cancer Institute, Gujarat. The study included 37 patients. A Gujarat version of symptom checklist – 90 revised (SCI-90R) was used to assess anxiety and depression. The result shows that 70% of patients had psychological disturbances. Among that 40 % of patients had moderate and severe depression and 30 % of them had moderate and severe anxiety respectively.

Burgess, C.et al. (2005) had done a study on "depression and anxiety in women with early breast cancer: five year observational cohort study". The aim of this study was to examine the prevalence of, and risk factors for, depression and anxiety in women with early breast cancer in the five years after diagnosis. Observational cohort study was used. The study was conducted in NHS breast clinic, London. Participants of this study were 222 women with early breast cancer: 170 (77%) provided complete interview data up to either five years after diagnosis or recurrence. Main outcome measures of this study was prevalence of clinically important depression and anxiety (structured psychiatric interview with standardized diagnostic criteria) and clinical and patient risk factors, including stressful life experiences (Bedford

College life events and difficulties schedule). Nearly 50% of the women with early breast cancer had depression, anxiety, or both in the year after diagnosis, 25% in the second, third, and fourth years, and 15% in the fifth year. Point prevalence was 33% at diagnosis, falling to 15% after one year. 45% of those with recurrence experienced depression, anxiety, or both within three months of the diagnosis. Previous psychological treatment predicted depression, anxiety, or both in the period around diagnosis (one month before diagnosis to four months after diagnosis). Longer term depression and anxiety, were associated with previous psychological treatment, lack of an intimate confiding relationship, younger age, and severely stressful non-cancer life experiences. Clinical factors were not associated with depression and anxiety, at any time. Lack of intimate confiding support also predicted more protracted episodes of depression and anxiety.

2. **Literature related to the use of Guided Imagery on Depression, Anxiety and Stress among Cancer Patients receiving radiation therapy**

Bennet (2014) An experimental study to find out the effectiveness of Guided Imagery on the anxiety of patients with head and neck cancer patients was done in International Cancer Centre, Neyyoor. Modified Zung Anxiety Scale was used for the study. The intervention of guided imagery was given to the head and neck cancer patients with minimal to moderate anxiety for 30 minutes per day till 7 days. It showed that with regard to the Pre-test level of anxiety in experimental group 14 (46.7%) were in minimal to moderate anxiety, 16 (53.3%) were in moderate to severe anxiety. Where as in control

group 18 (60%) were in minimal to moderate anxiety, 12 (40%) were in moderate to severe anxiety. After the intervention in experimental group, the pre test mean score is 59 with Standard deviation of 7.52, mean difference 51.48 and the Post-test mean score is 51.3 with Standard deviation of 7.27, mean difference 44.03. The calculated paired t-test score is 4.05**.** It is significant at $p<0.01$ level. Where as in control group, the pre test mean score was 57.6 with Standard deviation of 7.8, mean difference 49.8 and the post-test mean score was 52.7 with Standard deviation of 6.57, mean difference 46.13. The calculated paired t-test score was 2.64. It was not significant at $p>0.01$ level. It is inferred that guided imagery is highly effective in reducing anxiety among head and neck cancer patients.

Zhen Guo et.al (2013) A study was done in Guilin Medical College Affiliated Hospital, Peoples Republic of China, with the main objective of determining the benefits of psychological intervention such as Guided Imagery technique for cancer patients who received RT. Many patients with cancer experience depression and anxiety, and an associated decrease in quality of life (QOL) during radiation therapy (RT). Patients with cancer (n = 178) who agreed to participate in the study were randomized to the intervention group (n = 89) or the control group (n = 89). Patients in the intervention group received psychosocial care during RT, whereas the control group received RT only. The benefits of the intervention were evaluated using the Zung Self-rating Depression Scale (SDS) to measure depression, the Self-rating Anxiety Scale (SAS) to assess anxiety, and the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-Core 30 (EORTC QLQ-

C30) to survey health-related QOL. The association between intervention and survival was also assessed. Results: Patients randomly assigned to the intervention group showed significant improvements on symptoms of depression ($p < 0.05$) and anxiety ($p < 0.05$), health-related QOL ($p < 0.05$ when compared with controls. In the subset analysis, female patients, those that received high dose irradiation, benefited more from psychosocial intervention.

Mi Hye Lee, Dong-Hee Kim, and Hak Sun (2013) This study was conducted to evaluate the effects of guided imagery on stress in patients undergoing radioactive iodine therapy after thyroidectomy in Korea. Participants were 84 individuals (44 for experimental group and 40 for control group) with thyroid cancer. The experimental group listened to a guided imagery CD once a day for 1 week. Global Assessment of Recent Stress were self-administered, and heart rate variability was measured at three time points; prior to intervention (T1), just before intervention (T2) and 1 week later after intervention (T3). Heart rate variability was consisted of Standard Deviation of all NN interval (SDNN), Total Power (TP), Low Frequency (LF), and High Frequency (HF). There were significant decreases in stress ($F = 28.45$, $P < 0.001$) over time in the experimental group compared to the control group. Heart rate variability changed over time in the experimental group relative to the control group; SDNN ($F = 6.68$, $P = 0.002$), TP ($F = 5.29$, $P = 0.006$), LF ($F = 4.58$, $P = 0.012$), and HF ($F = 3.71$, $P = 0.026$). From the results of this study guided imagery can be recommended as an effective intervention to thyroid cancer patients with stress and fatigue.

Yogaraj (2012) A study to done in Sri Ramakrishna Hospital, Coimbatore, Tamil Nadu to find out Effectiveness of Guided imagery on anxiety among cancer patients undergoing cancer therapy was examined through Quasi experimental Pre-test posttest with control group design. Purposive samples of 20 cancer patients with anxiety were included for the study. Guided imagery was intervened to the patient. State trait anxiety scale was used to assess the level of anxiety before and after Guided imagery. The data gathered were statistically analysed to test the hypotheses. the mean score of cancer patients before receiving guided imagery for the experimental group was 107.4 and it was decreased to 72.3 after intervention. To test the significance in the mean difference paired‘t’ test was applied. The calculated‘t’ value was 19.76 and the table was 2.262 at9 degrees of freedom with 0.05 level of significance. The calculated value was higher than the table value, thus the alternative hypothesis was accepted. Hence, there existed a significant effect on administration of guided imagery on reducing the anxiety level among cancer patients undergoing chemotherapy. The result revealed that there was a significant difference in the level of anxiety before and after Guided imagery. Hence, the study concluded that Guided imagery is found to be an effective therapy in reducing the level of anxiety.

Haisfield-wolfe,M.E. Deborah, B.M. and Krumm, S. (2012) conducted a study on “perspectives on coping among patients with head and neck cancer receiving radiation”. The aim of this study was to describe coping among patients with laryngeal and oropharyngeal cancer during definitive radiation with or without chemotherapy. Qualitative content analysis conducted within a

larger study. Setting of this study was two radiation oncology outpatient clinics in Baltimore, MD. Participants were 21 patients with oropharyngeal or laryngeal cancer. Interviews with open-ended questions were conducted during treatment. Questions covered topics such as coping during treatment, treatment-related issues, and resources. The main research variables were Coping, treatment, and coping resources. Patients' self-assessments suggested they were coping or that coping was rough or upsetting. Issues that required coping varied over four time points. Physical side effects were problematic during and one month after treatment completion. Patients used coping to manage the uncertainties of physical and psychological aspects of their experience. Family and friend support was a common coping strategy used by patients, with the intensity of side effects corresponding with the support provided across time points. Findings confirm previous research, but also provide new information about ways in which patients with head and neck cancer cope with their illness experience. Emergent themes provide insight into patient's feelings, issues and assistance received with coping.

Evan Holder (2009) Effects of an integrated imagery program in modulating perceived stress levels, anxiety as well as depression levels was studied in 70 breast cancer patients undergoing radiation therapy. Two psychological questionnaires- Hospital Anxiety and Depression Scale (HADS) and Perceived Stress Scale (PSS) – and DNA damage assay were used in the study. Before intervention the pre test mean scores were 9.32 and 8.24 for anxiety and depression respectively. The mean score for perceived scale was 18.25.The numbers indicated that patients had moderate to severe level of anxiety,

depression and stress before intervention. After intervention the mean scores were 5.35 for depression and 4.14 for anxiety. The mean scores for stress was 10.25. The results indicate a significant decrease in the level of anxiety, depression and stress after administering Guided Imagery Intervention. Therefore it can be inferred from the study that Guided Imagery is effective in decreasing anxiety, depression and stress among cancer patients.

Daniela Fetter Telles Nunes (2007) The study examined the effects of relaxation and visualization therapy (RVT) on psychological distress, cortisol levels, and immunological parameters of breast cancer patients undergoing radiotherapy. Participants were randomly assigned to either the experimental (*n*=20) who underwent group RVT for 24 consecutive days or control group (*n*=14) who were on radiotherapy only. Psychological scores (stress, anxiety, and depression) were measured by structured clinical interviews. Salivary cortisol was assessed along the day. Lymphocytes were isolated and cultured to measure T-cell proliferation and sensitivity to glucocorticoids (GCs). The results showed that RVT was effective to reduce stress, anxiety, and depression scores (all $P<.05$). However, cortisol levels as well as proliferation remained unchanged following RVT. Although T cells of experimental group were more sensitive to GCs than cells of controls at baseline, no changes were noted following RVT. Cortisol levels were positively correlated to anxiety and depression scores and inversely correlated to T-cell proliferation and sensitivity to GCs.

Lynne Campbell (2003) A Quasi Experimental study was applied in Sandton Oncology Centre, Johannesburg and Mary Potter Clinic, Pretoria in South

Africa to study the effectiveness of Guided Imagery on 40 women, aged between 30 and 60, with stages 1,2 or 3 Breast Cancer, randomly selected to a treatment and a control group. Hospital Anxiety and Depression Scale and Blood Pressure measurements were used. Statistical analysis of the data revealed that Guided Imagery intervention correlated with a decrease in Blood Pressure (Systolic and Diastolic) measurements, as well as depression and anxiety. The pre test mean scores of Blood Pressure, depression and anxiety were 69.93, 5.39 and 9.75 respectively. After the Guided Imagery intervention the mean scores of 44.25 for Blood Pressure, 2.54 for Depression and 4.14 for Anxiety. Paired t –test was done at 5% level of significance and it was found that there was a significant difference in the measured components level after the intervention. The most significant decrease was correlated with the anxiety variable.

CHAPTER- III

METHODOLOGY

Research Methodology is a way to find out the result of a given problem on a specific matter or problem that is also refereed as research problem. In Methodology, researcher uses different criteria for solving/ searching the given research problem. Different sources use different type of methods for solving the problem. If we think about the word "Methodology", it is the way of searching or solving the research problem.

(Industrial Research Institute, 2010).

The methodology of research indicates the general pattern for organizing the procedure of gathering valid and reliable data for an investigation. This chapter deals with a brief description of methodology adopted for the study. The contents included in this chapter are research approach, research design, the setting, the sample and sampling techniques, description of tools, data collection procedure and the plan of data analysis for the present study.

The present study was carried out to evaluate the effectiveness of guided imagery technique on depression, anxiety and stress among cancer patients receiving radiation therapy.

RESEARCH APPROACH

The research approach selected to accomplish the objectives of the study was **Experimental** approach. Since the purpose of the study was to find out the effectiveness of guided imagery technique on depression, anxiety and stress among

cancer patients receiving radiation therapy the Experimental approach was considered to be most appropriate.

RESEARCH DESIGN

A research design are invented to enable the researcher to answer research questions as validly, objectively, accurately and economically as possible.

(Polit and Beck 2005)

The research design selected for this study was "**Quasi Experimental Design**" used to measure the effectiveness of guided imagery technique on depression, anxiety and stress among cancer patients receiving radiation therapy.

This study had control group, experimental group and manipulation without randomization. In this design the experimental group received the intervention strategy, but the control group did not receive the intervention strategy.

Research design adopted can be represented as:

Experimental group	O1	X	O2
Control group	O1	_	O2

Key

O1 - Assessment of depression, anxiety and stress.

X - Administration of guided imagery technique.

O2 - Assessment of depression, anxiety and stress.

VARIABLES UNDER STUDY

A variable, as the name implies, is something that varies. A variable is any quality of an organism, group or situation that takes on different values. Variability in the dependent variable is presumed to depend on variability in the independent variable.

(**Polit and Hungler, 2010)**

The **independent variable**: The variable that is believed to cause or influence the dependent variable.

In the present study the independent variable is the guided imagery technique.

The **dependent variable**: The variable hypothesized to depend on or intended to change by the variable (the independent variable): the outcome variable of interest in the present study is depression, anxiety and stress in cancer patients receiving radiation therapy.

SETTING OF THE STUDY

Study setting is the general physical location in which data collection takes place

(Polit & Beck 2004).

The present study was undertaken in Erode Cancer Centre at Erode.

POPULATION

Population refers to the entire aggregation of cases that meets the design criteria.

(Polit and Beck, 2002)

In the present study population comprises of cancer patients residing in Erode district.

SAMPLE

Sample is a subset of population selected to participate in a research study.

(Polit and Hungler, 2010)

The sample for this study was cancer patients who fulfilled the inclusion criteria at Erode Cancer Centre.

SAMPLE SIZE

A total of 60 samples were selected in Erode Cancer. 30 patients from inpatient unit were selected for experimental group and 30 patients from outpatient unit were selected for control group.

SAMPLING TECHNIQUE

Sampling is the process of selecting a portion of the population who represent the entire population**.**

(Polit and Beck 2001)

In the present study the sample selection was done by Non Randomized Purposive sampling technique.

SAMPLING CRITERIA

The samples for the study were selected based on the following criteria.

INCLUSION CRITERIA

- Cancer patients with depression, anxiety and stress
- Patients of Erode Cancer Centre, Erode.
- Cancer patients receiving radiation therapy only.
- Who can speak and understand Tamil
- Patients willing to participate in the study

EXCLUSION CRITERIA

- Patients who are receiving any other form of relaxation technique
- Patients who are receiving anxiolytics and anti depressants
- Patients who had cognitive impairment and are critically ill
- Patients with sensory deficit such as hearing impairment.

SELECTION OF RESEARCH INSTRUMENT

Research instruments or tools are ways of gathering data. Without them data would be impossible to put in hand which is used by the researcher to observe or measure the key variables in the research problem. The major task of the researcher is to select instruments most accurately.

The instrument used in the study was **Depression Anxiety and Stress Scale** (DASS 21) to assess the level of depression, anxiety and stress among cancer patients receiving radiation therapy.

DATA COLLECTION METHOD

Interview method was used for data collection.

DATA COLLECTION INSTRUMENT

The instrument was selected by the investigator based on the objectives of the study, after reviewing the literature about depression, anxiety and stress among cancer patients receiving radiation therapy.

The following steps were carried out in selecting the tool

1. A review of the research and non-research literature done in the areas, related to effect of guided imagery on depression, anxiety and stress.
2. Opinion of experts was sought to ascertain the clarity and appropriateness of the items.
3. Informal discussions were held with concerned experts.

DESCRIPTION OF THE INSTRUMENT

The instrument used for data collection is **Depression Anxiety and Stress Scale (DASS 21)** to evaluate the condition of cancer patients with depression, anxiety and stress.

The study tool consists of two sections as follows:

Part I

Demographic data: Contents included in this section are Demographic proforma which includes age, gender, marital status, educational status, awareness of diagnosis and awareness of prognosis.

Part II

The **Depression Anxiety and Stress Scale** was developed by Lovibond SH, and Lovibond PF from Sydney Psychology Foundation in the year 1995. The scale consisted of 42 items comprising three scales of 14 items. The DASS is a **quantitative** measure of distress along the 3 axes of depression, anxiety and stress. Subsequent research established a 21item version of the DASS (DASS21) with seven items per scale (Antony, Bieling, Cox, Enns, & Swinson, R. P., 1998) It is not a categorical measure of clinical diagnoses.

SCORING

The **Depression Anxiety and Stress Scale (DASS21)** consists of a set of 21 questions equally divided to measure depression, anxiety and stress. The minimum score for each question is 0 and the maximum score is 3. The minimum total score is 0 and the maximum score is 21 for each component. The scores are obtained by adding the numerical values.

TOTAL SCORE INTERPRETATION

Levels	**Depression**	**Anxiety**	**Stress**
Normal	**0-4**	**0-3**	**0-7**
Mild	**5-6**	**4-5**	**8-9**
Moderate	**7-10**	**6-7**	**10-12**
Severe	**11-13**	**8-9**	**13-16**
Extremely Severe	**14+**	**10+**	**17+**

TESTING OF THE TOOL

Content validity

The instruments were validated by 5 experts from the field of Psychiatric Nursing and Psychiatry and the tool was adapted as it is for the study.

Reliability of Tool

Reliability of research instruments defined as the extent to which the instrument has the same results on repeated measures.

(**Polit and Beck 2004)**

Numerous studies have found favourable psychometric properties of the DASS in adults. All studies have demonstrated excellent internal consistency of the DASS21 version: Depression (range=.91 to .97); Anxiety (range=.81 to .92); and Stress (range=.88 to .95). A three factor solution reflecting the three scales has been found consistently across samples and factor analytic techniques with only minor variations. Interscale correlations range as follows: Depression – Anxiety (.45 – .71; .50 or below in all English speaking samples (Antony et al., 1998; Brown, et al., 1997; Clara et al., 2001), Anxiety – Stress (.65 – .73), and Depression – Stress (.57 – .79).Reliability for the DASS-21 total score was ρ=.94. Cronbach's alpha was also calculated for each of the other measures used in this study and ranged between .86 and .90. The tamil translation of the tool used for the study was carried out by Dr. Nalayini Sugirthan, GP unit Fairfield Hospital, Fairfield, Australia. The reliability of the tamil version of the tool was tested for its reliability using the test retest method and was found to be highly reliable (r=0.9).

PILOT STUDY

A pilot study was conducted after obtaining permission from the authorities. 6 cancer patients (3 for experimental group and 3 for control group) receiving radiation therapy at Erode Cancer Centre, Erode were selected and informed about the objectives. Pre-test was conducted using Depression, Anxiety and Stress Scale. Intervention was given for the experimental group only and Post-test was done for both groups using the same scale. There was significant reduction in the level of depression, anxiety and stress at $p<0.05$ It revealed that the study is feasible. Data were analyzed by using differential and inferential statistics. The study report ensured feasibility of the study.

DATA COLLECTION PROCEDURE

Data collection is the gathering of the information to address the research problem.

The word "data" means information i.e. systematically collected in the course of study.

DATA COLLECTION PROCESS

Samples were selected by using simple purposive sampling technique. Cancer Patients who met the inclusion criteria were selected for the study. Demographic data and response to Depression, Anxiety and Stress Scale was collected by interview method both in control group and in experimental group to assess the level of depression, anxiety and stress prior to intervention for the experimental group.

- A formal Prior permission was obtained from the Medical Director of Erode Cancer Centre.

- Pre-test was conducted for 3 days for both the groups using Depression, Anxiety and Stress Scale (DASS 21) through interview method.
- 30 patients from inpatient department and 30 patients from outpatient department who were receiving radiation therapy were selected using purposive sampling technique for the study.
- The samples were explained about the purpose of the study and oral consent was obtained from each participant and assured for confidentiality.
- The experimental group was divided into 3 groups, each group containing 10 patients. The experimental groups were gathered together in the ward at 8.am daily for 3 weeks for the intervention.
- Each group in the experimental groups received guided imagery intervention for 30 minutes daily.
- The Post-test was carried out after 3 weeks of intervention for 3 days using Depression, Anxiety and Stress Scale (DASS 21) through interview method for both the groups.
- The total study was conducted for a period of 4 weeks.

DATA ANALYSIS

Data analysis is the systematic organization and synthesis of research data and testing of null hypotheses by using the obtained data

Polit & Beck (2004).

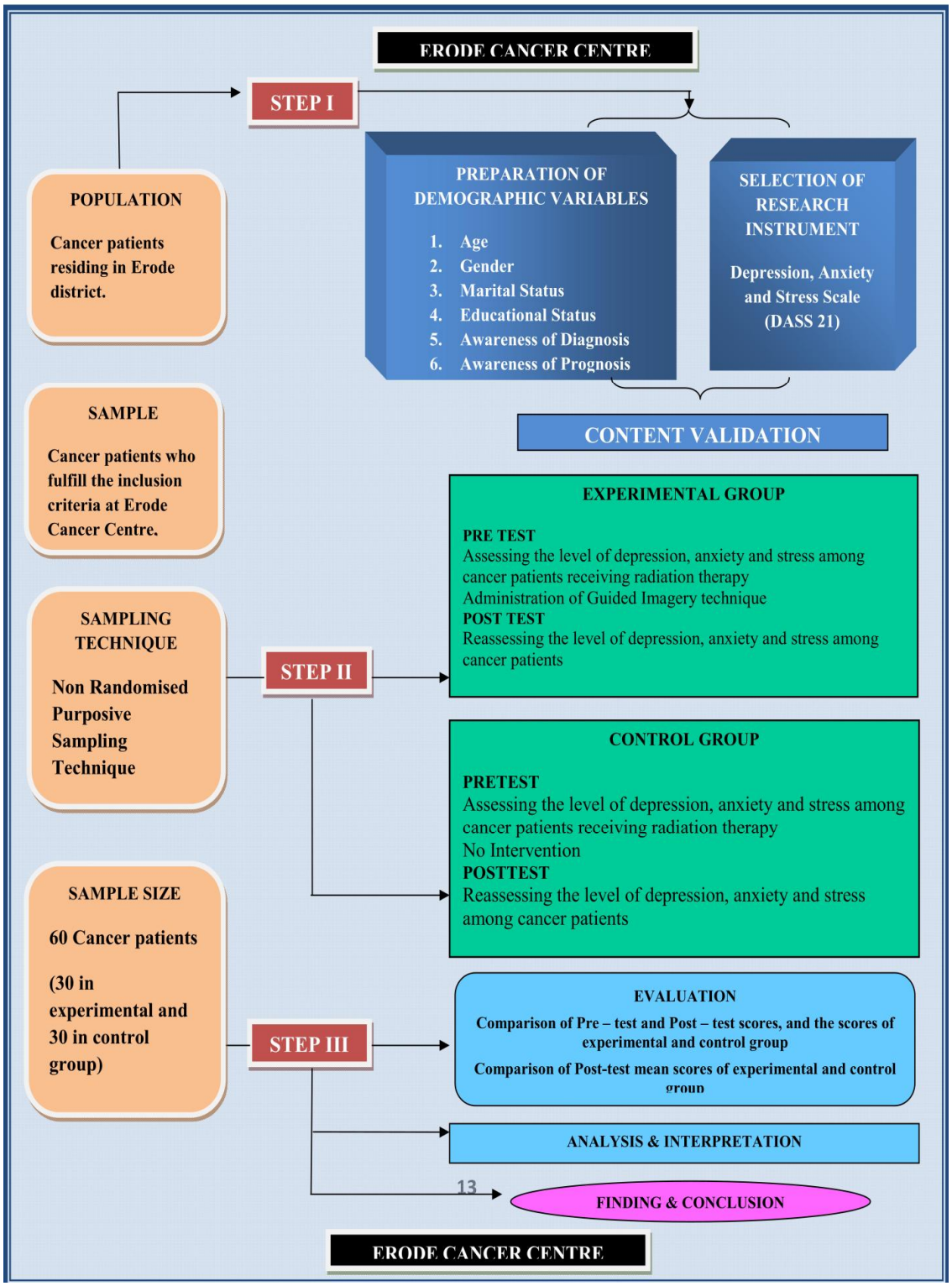
The collected data was organized, tabulated and analyzed by using descriptive and inferential statistics. Study was commuted at 0.05 level of significant.

1. To assess the pre test and post level of depression, anxiety and stress among experimental and control group**,** frequency and percentage was used**.**
2. To evaluate the effectiveness of guided imagery technique on depression, anxiety and stress among cancer patients receiving radiation therapy were in experimental and control group mean, standard deviation and paired and t-test were used.
3. Chi-square test was used to determine the association between the pre test level of depression, anxiety and stress among experimental and control group with their selected demographic variables. Analyzed data was presented in the form of tables, diagrams, graphs based on the findings.

PROTECTION OF HUMAN SUBJECTS

The proposed study was conducted after the approval of Dissertation committee of the college. Permission was obtained from the Medical Director of Erode Cancer Centre. Oral consent was obtained before starting the data collection. Assurance was given to them that anonymity of each individual and confidentiality would be maintained throughout the study. After completion of the study guided imagery technique was given to control group also.

Figure 2 *Schematic Representation of the Research Design of the study*



CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

"Data analysis is a systematic search for meaning. It is a way to process qualitative data so that what has been learned can be communicated to others. Analysis means organizing and interrogating data in ways that allow researchers to see patterns, identify themes, discover relationships, develop explanations, make interpretations, mount critiques, or generate theories. It often involves synthesis, evaluation, interpretation, categorization, hypothesizing, comparison, and pattern finding."

(Hatch 2002)

This chapter deals with the description of the analysis and interpretation of the data collected to evaluate effectiveness of Guided Imagery technique on depression, anxiety and stress among cancer patients receiving radiation therapy in selected hospital at Erode.

The obtained data was analyzed, tabulated and interpreted by employing descriptive and inferential statistics.

The data collected was calculated based on the following objectives:

- To assess the pre test and Post-test level of depression, anxiety and stress among cancer patients receiving radiation therapy in both experimental and control group.
- To implement and evaluate the effectiveness of guided imagery technique on level of depression, anxiety and stress among cancer patients receiving radiation therapy.

- To find out the association between the pre test level of depression, anxiety and stress among cancer patients receiving radiation therapy with their selected demographic variables like age, gender, marital status, educational status, awareness of diagnosis and awareness of prognosis.

The data have been organized under the following sections: -

Section I : Distribution of samples in terms of demographic variables in experimental and control group.

Section II : Assessment of pre-test and post-test level of depression, anxiety and stress in experimental group and in control group.

Section III : Comparison of pre test and Post-test score of depression, anxiety and stress in experimental group and control group.

Section IV : Comparison of Post-test scores of depression, anxiety and stress among cancer patients receiving radiation therapy in experimental group and control group.

Section V : Association between pre-test scores of depression, anxiety and stress in experimental group and control group with selected demographic variables.

SECTION I

DISTRIBUTION OF SAMPLES IN TERMS OF DEMOGRAPHIC VARIABLES IN EXPERIMENTAL AND CONTROL GROUP

Table–1: Distribution of Samples in Terms of Demographic Variables in Experimental and Control Group

S.NO	SAMPLE CHARACTERISTICS	EXPERIMENTAL GROUP N= 30		CONTROL GROUP N= 30	
		Freq	%	Freq	%
1.	**AGE**				
	21 – 40 yrs	4	14	7	23
	41 – 60 yrs	17	56	17	57
	61 – 80 yrs	9	30	6	20
2.	**GENDER**				
	Male	10	34	9	30
	Female	20	66	21	70
3.	**MARITAL STATUS**				
	Single	0	0	1	3
	Married	30	100	29	97
	Divorced	0	0	0	0
4.	**EDUCATIONAL STATUS**				
	Literate	12	40	7	23
	Illiterate	18	60	23	77
5.	**AWARENESS OF DIAGNOSIS**				
	Yes	23	77	26	87
	No	7	23	4	13
6.	**AWARENESS OF PROGNOSIS**				
	Yes	22	73	27	90
	No	8	27	3	10

The data given in **Table 1 ,** shows that according to **age,** 4 cancer patients (14%) were in the age group of 21-40yrs, 17 of them (56%) were in the age group of 41-60 years, 9 of them (30%) were in the age group of 61-80 years in experimental group where as 7 cancer patients (23%) were in the age group of 21-40yrs, 17 of them

(57%) were in the age group of41-60 years, 6 of them (20%) were in the age group of 61-80 years and in control group. .

With regarding to **gender**, 10 cancer patients (34%) were males and 20 of them (66%) were females in experimental group where as 9 cancer patients (30%) were males and 21 of them (70%) were females in the control group.

In relation to **marital status**, all 30 cancer patients (100%) were married in experimental group where as 1 cancer patient (3%) was single and 29 of them (97%) were married in control group. There were no divorcees in both experimental and control group

With regarding to **education**, 12 cancer patietns (40%) were literates and 18 of them (60%) were illiterates in experimental group where as 7 cancer patients (23%) were literates and 23 of them (77%) were illiterates in the control group.

In relation to **awareness of diagnosis**, 23 cancer patients (77%) were aware of their diagnosis and 7 of them (23%) were unaware in experimental group. And 26 cancer patients (87%) were aware of their diagnosis and 4 cancer patients 13% were unaware of their in control group.

In relation to **awareness of prognosis**, 22 cancer patients (73%) were aware of their prognosis and 8 of them (27%) were unaware in experimental group. And 27 cancer patients (90%) were aware of their prognosis and 3 cancer patients 10% were unaware of their in control group.

Table - 2. Distribution of Sample in Terms of Age

S. No	SAMPLE CHARACTERISTICS	EXPERIMENTAL GROUP N= 30		CONTROL GROUP N= 30	
	AGE	**Freq**	**%**	**Freq**	**%**
1.	21 – 40 yrs	4	14	7	23
	41 – 60 yrs	17	56	17	56
	61 – 80 yrs	9	30	6	19

The data given in **Table 2 ,** shows that majority 17 (56%) of the cancer patients in the experimental group were in the age group of 41-60 years**,** 9 (30%) of them were in the age group of 61-80 years, 4 (14%) cancer patients were in the age group of 21-40yrs. Whereas majority 17 (56%) of the cancer patients in the control group were in the age group of 41-60 years**,** 7 (23%) of them were in the age group of 21 -40 years, 6 (19%) cancer patients were in the age group of 61-80yrs.

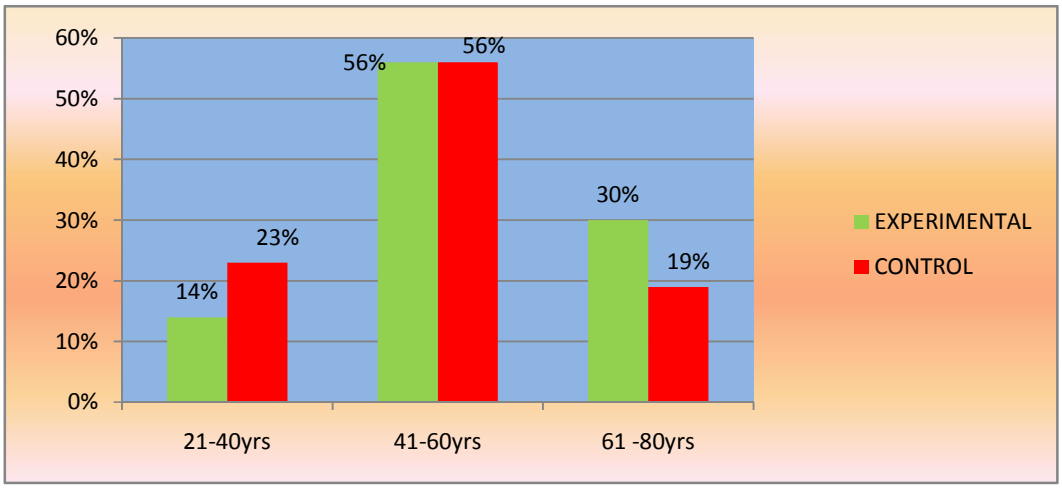


Figure -3: Distribution of sample in terms of age

Table – 3: Distribution of Sample in Terms of Gender

S. No	SAMPLE CHARACTERISTICS	EXPERIMENTAL GROUP N= 30		CONTROL GROUP N= 30	
2.	**GENDER**	**Freq**	**%**	**Freq**	**%**
	Male	10	34	9	30
	Female	20	66	21	70

The data given in **Table 3,** illustrates that majority of the cancer patients in experimental group 20 (665%) were females and 10 (34%) of them were males. Similarly in the control group majority of the cancer patients 21 (70%) were females and 9 (30%) were males.

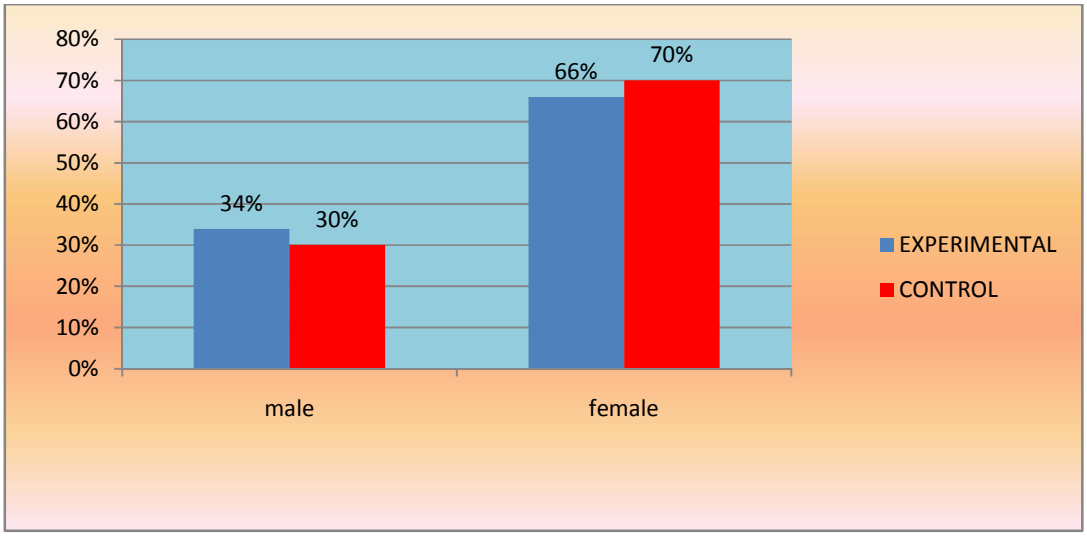


Figure 4 - Distribution of sample in terms of Gender

Table- 4: Distribution of Sample in Terms of Marital Status

S. No	SAMPLE CHARACTERISTICS	EXPERIMENTAL GROUP N= 30		CONTROL GROUP N= 30	
3.	**MARITAL STATUS**	**Freq**	**%**	**Freq**	**%**
	Single	0	0	1	3
	Married	30	100	29	97
	Divorced	0	0	0	0

The data given in **Table 4,** describes on **marital status**, all 30 cancer patients (100%) were married in experimental group where as most of the cancer patients 29 (97%) were married and 1 cancer patient (3%) was single in control group. There were no divorcees in both experimental and control group

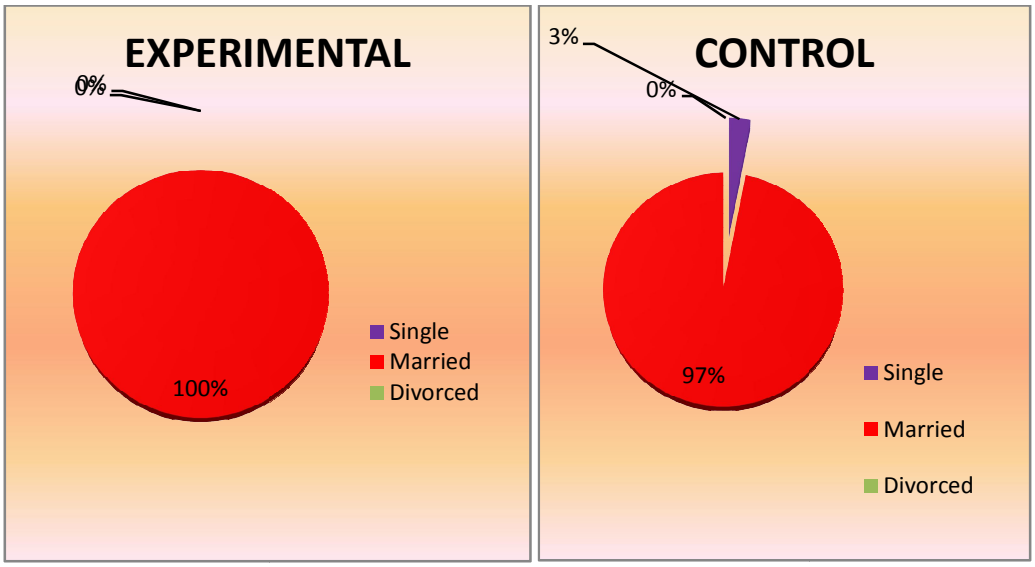


Figure 5- Distribution of samples in terms of marital status

Table 5. Distribution of Sample in Terms of Educational Status

S. No	SAMPLE CHARACTERISTICS	EXPERIMENTAL GROUP N= 30		CONTROL GROUP N= 30	
4.	**EDUCATIONAL STATUS**	**Freq**	**%**	**Freq**	**%**
	Literate	12	40	7	23
	Illiterate	18	60	23	77

The data given in **Table 5,** explains about **educational status.** Majority of cancer patients 18 (60%) were illiterates in experimental group and 12 (40%) cancer patients were literates. Where as 23 of them (77%) were illiterates in the control group and 7 cancer patients (23%) were literates.

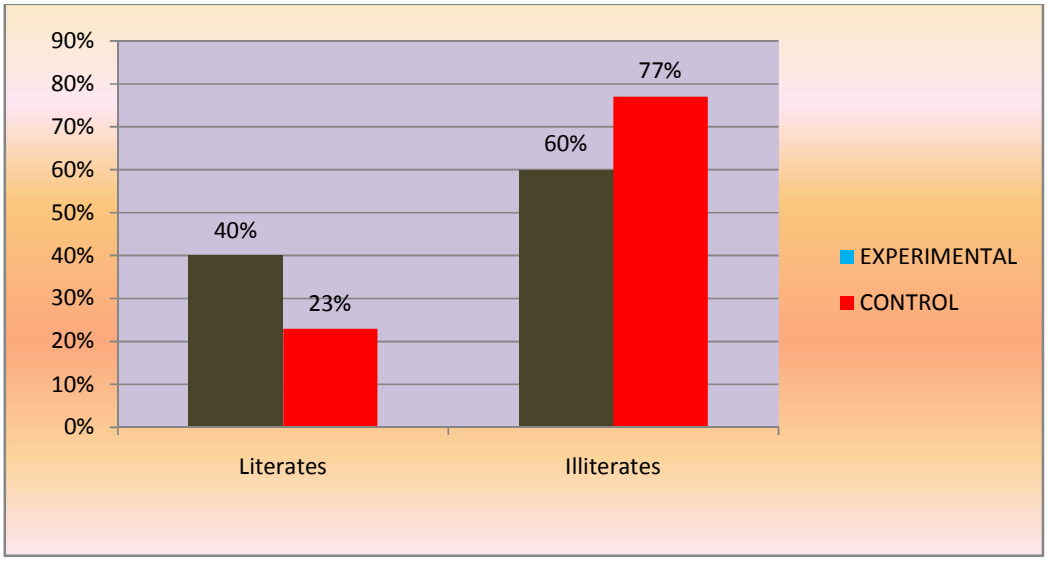


Figure 6 - Distribution of samples in terms of educational status

Table 6. Distribution of Sample in Terms of Awareness of Diagnosis

S. No	SAMPLE CHARACTERISTICS	EXPERIMENTAL GROUP N= 30		CONTROL GROUP N= 30	
5.	AWARENESS OF DIAGNOSIS	Freq	%	Freq	%
	YES	23	77	26	87
	NO	7	23	4	13

The data given in **Table 6,** describes that according to awareness of diagnosis, majority of cancer patients 23 (77%) were aware of their diagnosis and 7 of them (23%) were unaware in experimental group. Similarly in control group majority 26 (87%) of the cancer patients were aware of their diagnosis and 4 (13%) of them were unaware of their in control group.

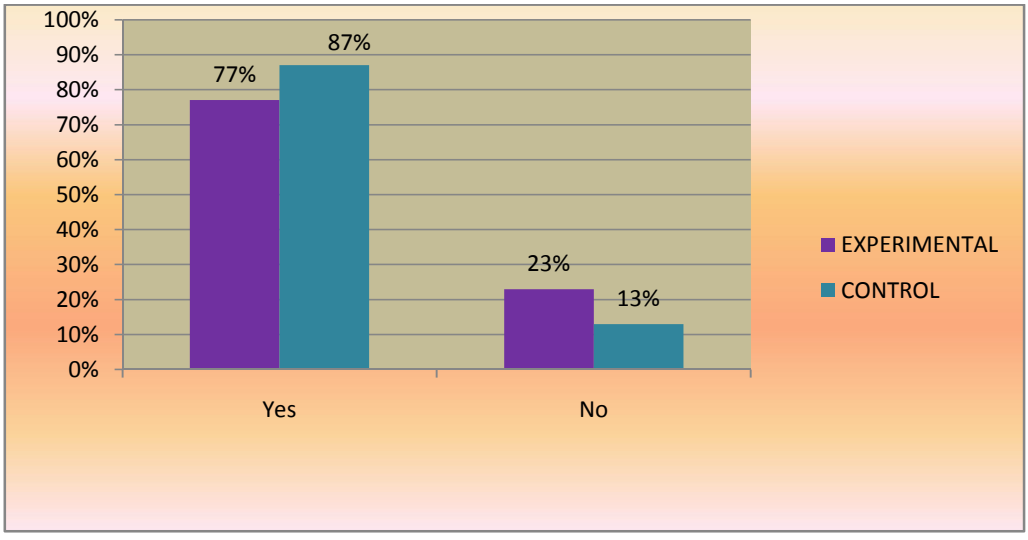


Figure 7 - Distribution of samples in terms of awareness of diagnosis

Table 7. Distribution of Sample in Terms of Awareness of Prognosis.

S. No	SAMPLE CHARACTERISTICS	EXPERIMENTAL GROUP N= 30		CONTROL GROUP N= 30	
6	AWARENESS OF PROGNOSIS	Freq	%	Freq	%
	YES	22	73	27	90
	NO	8	27	3	10

The data given in **Table 7,** illustrate the distribution of sample in terms of **awareness of prognosis**, majority of cancer patients 22 (73%) were aware of their prognosis and 8 (27%) of them were unaware in experimental group. Similarly in the control group 27 (90%) of the cancer patients were aware of their prognosis and 3 (10%) of them were unaware of their prognosis.

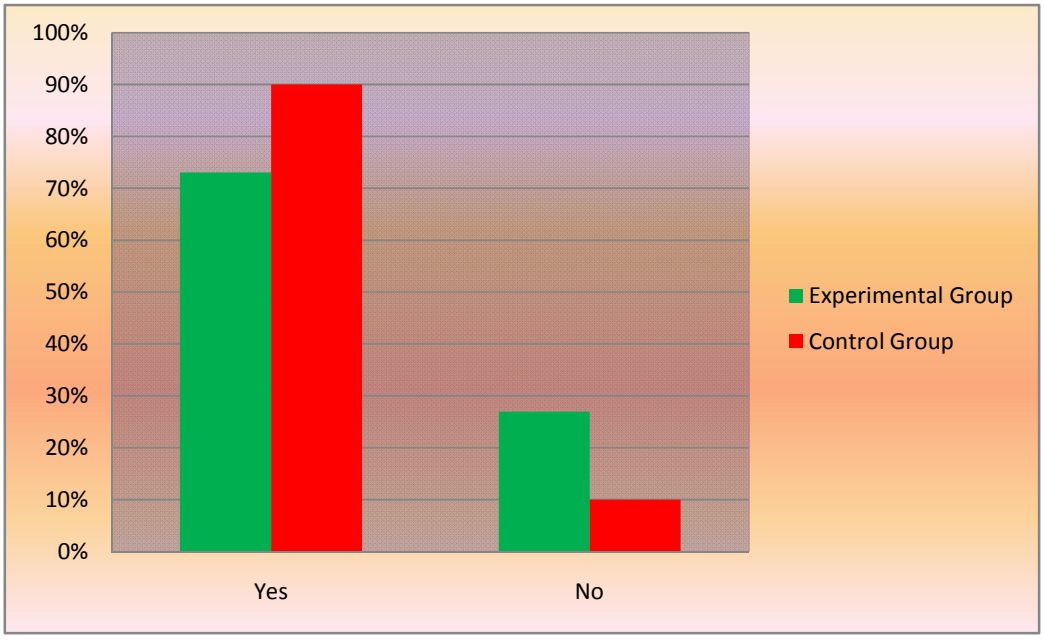


Figure 8 - Distribution of samples in terms of awareness of prognosis.

SECTION II

ASSESSMENT OF PRE-TEST AND POST – TEST LEVEL OF DEPRESSION, ANXIETY AND STRESS IN EXPERIMENTAL GROUP AND CONTROL GROUP

Table 8: Pre Test and Post-tests Level of Depression in Experimental Group (N=30)

LEVEL OF DEPRESSION	PRE-TEST		POST-TEST	
	Freq	%	Freq	%
Normal	2	7	9	30
Mild depression	1	3	1	3
Moderate depression	3	10	19	64
Severe depression	6	20	1	3
Extremely Severe Depression	18	60	0	0

The data presented in **Table 8** shows the frequency and percentage of Pre-test and Post-test level of depression of cancer patients in experimental group. Majority of cancer patients in pre- test 18 of them (60%) had extremely severe depression, 6 of them (20%) had severe depression and 3 of them (10%) had moderate depression, 1 patient (3%) had mild depression and 2 of them (7%) were normal respectively but in Post-test 19 of them (64%) had moderate depression, 9 of them (30%) had no depression and 1 of them (3%) had severe depression and 1 of them (3%) had mild depression respectively. None of them reported extremely severe depression in Post-test.

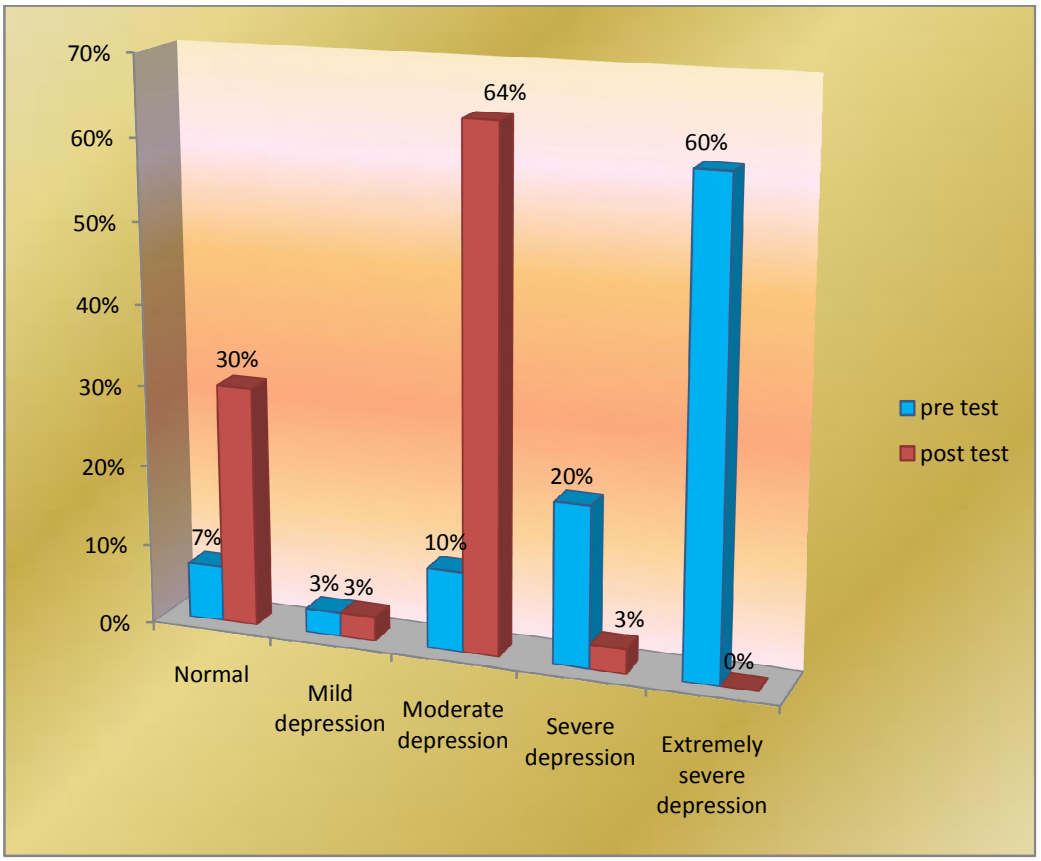


Figure 9 - Pre -test and Post-test level of depression in experimental group

Table 9: Pre Test and Post-test Level of Anxiety in Experimental Group (N=30)

LEVEL OF ANXIETY	PRE-TEST		POST-TEST	
	Freq	%	Freq	%
Normal	1	3	9	30
Mild anxiety	2	7	6	20
Moderate anxiety	4	14	11	36
Severe anxiety	6	20	4	14
Extremely Severe Anxiety	17	56	0	0

The data presented in **Table 9** shows the frequency and percentage of Pre-test and Post-test level of anxiety of cancer patients in experimental group. Majority of cancer patients in pre- test 17 of them (56%) had extremely severe anxiety, 6 of them (20%) had severe anxiety and 4 of them (14%) had moderate anxiety, 2 of them (7%) had mild anxiety and 1 of them (3%) had no anxiety respectively but in Post-test 11 of them (36%) had moderate anxiety, 9 of them (30%) had no anxiety and 6 of them (20%) had mild anxiety and 4 of them (14%) had severe anxiety respectively. None of them reported extremely severe anxiety in Post-test.

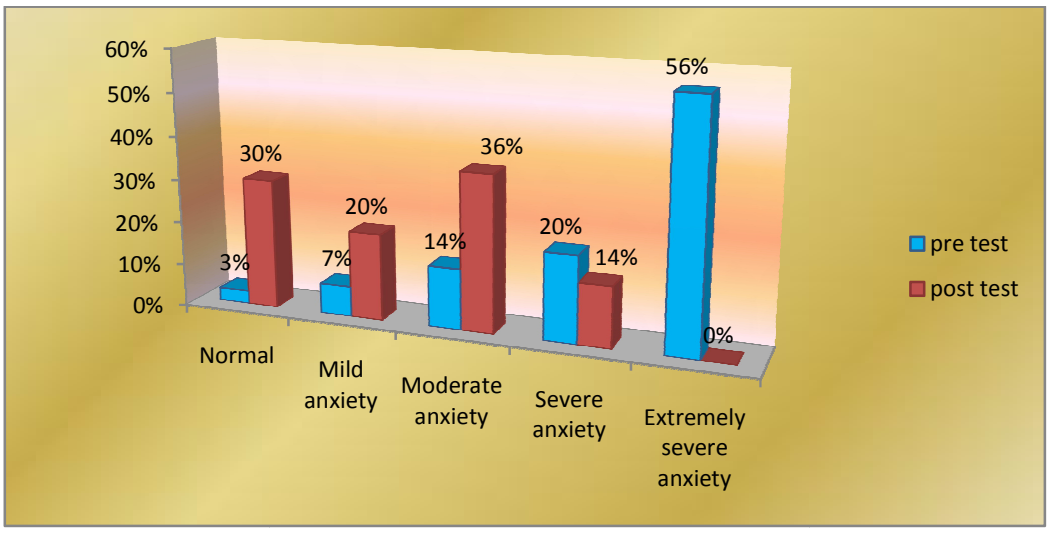


Figure 10 - Pre -test and Post-test level of anxiety in experimental group

Table 10: Pre Test and Post-tests Level of Stress in Experimental Group (N=30)

LEVEL OF STRESS	PRE-TEST		POST-TEST	
	Freq	%	Freq	%
Normal	4	14	26	87
Mild Stress	7	23	3	10
Moderate Stress	7	23	1	3
Severe Stress	12	40	0	0
Extremely Severe Stress	0	0	0	0

The data presented in **Table 10** shows the frequency and percentage of Pre-test and Post-test level of stress of cancer patients in experimental group. Majority of cancer patients in pre- test 12 of them (40%) had severe Stress, 7 of them (23%) had moderate Stress and 7 of them (23%) had mild Stress, 4 of them (14%) had no Stress and none of them had extremely severe Stress respectively but in Post-test 26 of them (87%) had no Stress, 3 of them (10%) had mild Stress and 1 of them (3%) had moderate Stress respectively. None of them reported severe and extremely severe Stress in Post-test.

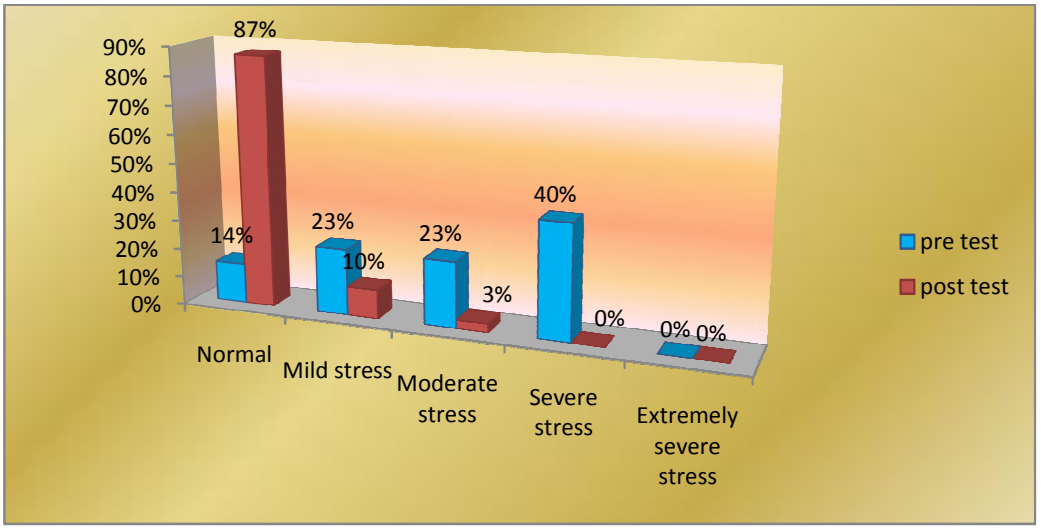


Figure 11 - Pre -test and Post-test level of stress in experimental group

Table 11 : Pre Test and Post-test Level of Depression in Control Group (N=30)

LEVEL OF DEPRESSION	PRE-TEST		POST EST	
	Freq	%	Freq	%
Normal	0	0	0	0
Mild depression	2	7	1	3
Moderate depression	3	10	3	10
Severe depression	6	20	7	24
Extremely Severe Depression	19	63	19	63

The data presented in **Table 11** shows the frequency and percentage of Pre-test and Post-test level of depression of cancer patients in control group. Majority of cancer patients in pre- test 19 of them (63%) had extremely severe depression, 6 of them (20%) had severe depression and 3 of them (10%) had moderate depression, 2 of them (7%) had mild depression respectively but in Post-test 19 of them (63%) had extremely severe depression, 7 of them (24%) had severe depression and 3 of them (10%) had moderate depression and 1 of them (3%) had mild depression respectively. None of them reported normal in pre test and Post-test.

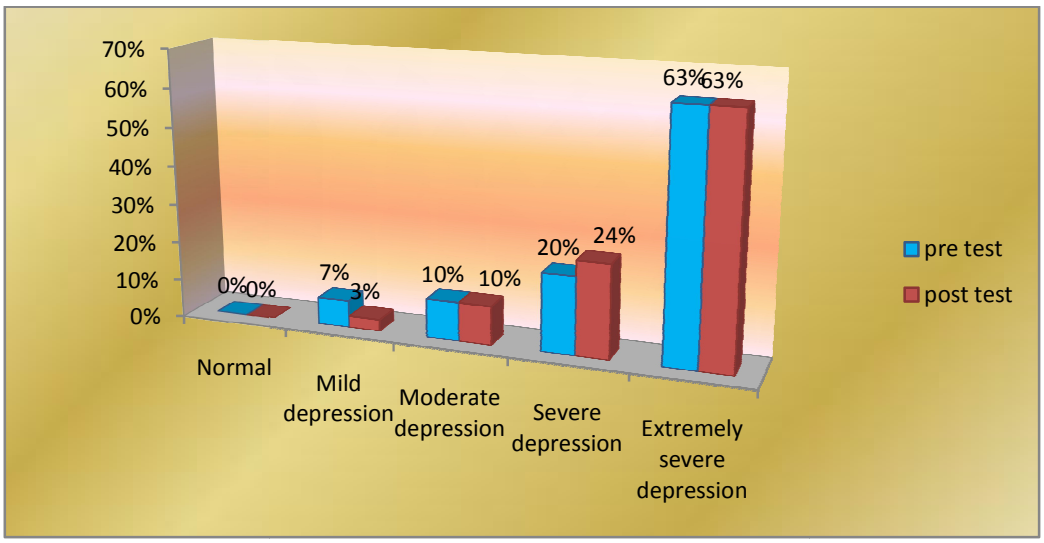


Figure 12 - Pre -test and Post-test level of depression in control group

Table 12: Pre Test and Post-tests Level of Anxiety in Control Group (N=30)

LEVEL OF ANXIETY	PRE-TEST		POST-TEST	
	Freq	%	Freq	%
Normal	0	0	0	0
Mild anxiety	0	0	0	0
Moderate anxiety	6	20	6	20
Severe anxiety	3	10	3	10
Extremely Severe Anxiety	21	70	21	70

The data presented in **Table 12** shows the frequency and percentage of Pre-test and Post-test level of anxiety of cancer patients in control group. Majority of cancer patients in pre- test 21 of them (70%) had extremely severe anxiety, 3 of them (10%) had severe anxiety and 6 of them (20%) had moderate anxiety respectively but in Post-test 21 of them (70%) had extremely severe anxiety, 3 of them (10%) had severe anxiety and 6 of them (20%) had moderate anxiety respectively. None of them reported normal and mild anxiety in pre and Post-test.

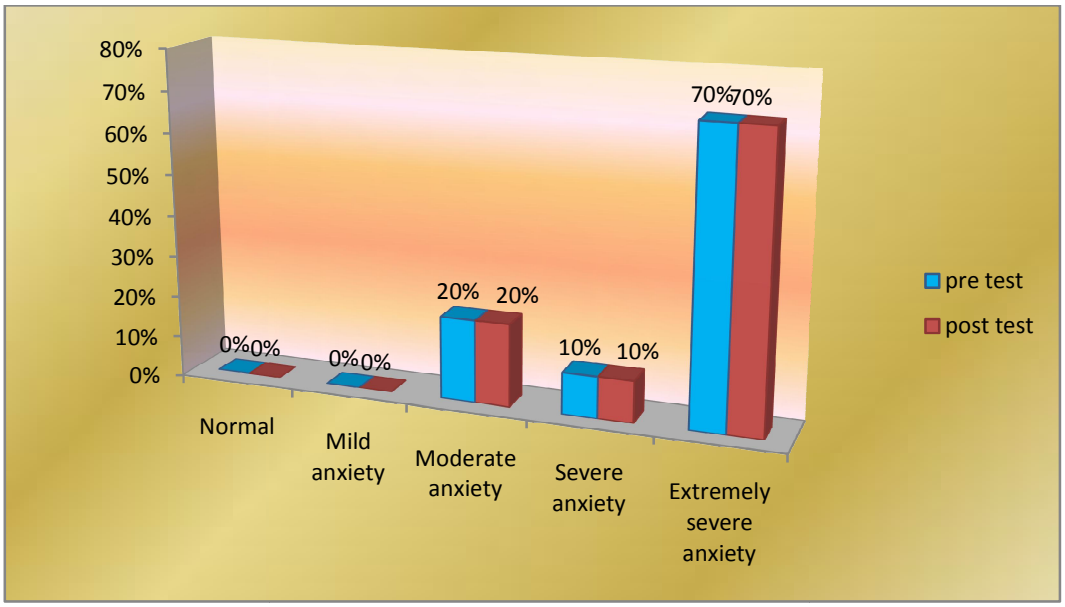


Figure 13 - Pre -test and Post-test level of anxiety in control group

Table 13: Pre Test and Post-tests Level of Stress in Control Group (N=30)

LEVEL OF STRESS	PRE-TEST		POST-TEST	
	Freq	%	Freq	%
Normal	2	6	2	6
Mild Stress	3	10	3	10
Moderate Stress	5	17	5	17
Severe Stress	17	57	15	50
Extremely Severe Stress	3	10	5	17

The data presented in **Table 13** shows the frequency and percentage of Pre-test and Post-test level of stress of cancer patients in control group. Majority of cancer patients in pre- test 17 of them (57%) had severe stress, 5 of them (17%) had moderate stress and 3 of them (10%) had extremely severe stress, 3 of them (10%) had mild stress 2 of them (6%) had no Stress respectively but in Post-test majority of the cancer patients 15 of them (50%) had severe Stress, 5 of them (17%) had extremely severe stress, 5 of them (17%) had moderate stress and 3 of them (10%) had mild stress, 2 of them (6%) reported no stress respectively.

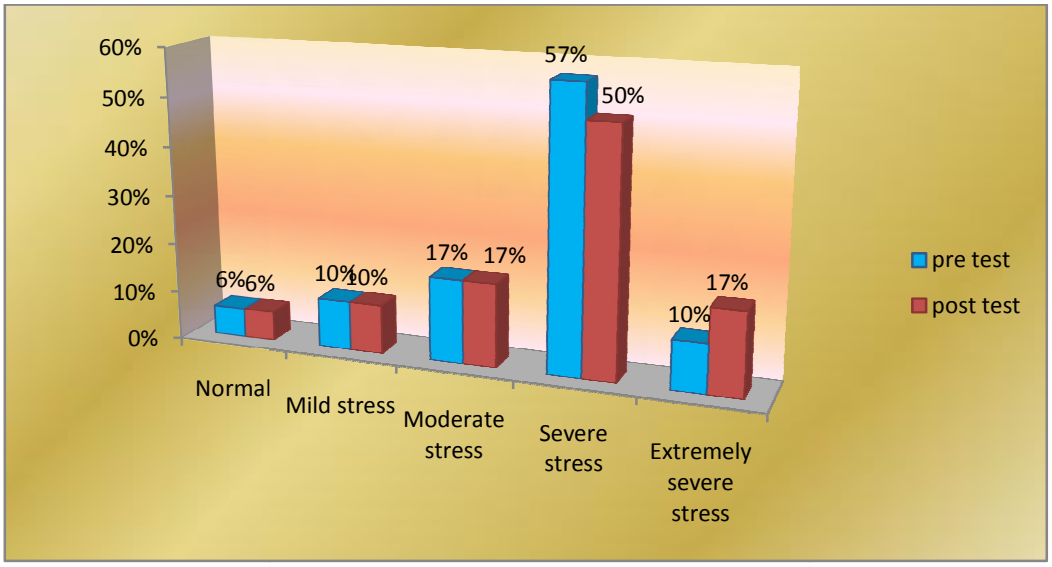


Figure 14 - Pre -test and Post-test level of stress in control group

SECTION III

COMPARISON OF PRE TEST AND POST-TEST SCORES OF DEPRESSION, ANXIETY AND STRESS IN EXPERIMENTAL AND IN CONTROL GROUP

Table 14*:* **Comparing the Mean Scores of the Components between the Pre-test and the Post-test in Experimental Group**

Component	*Observation*	*Mean*	*Mean%*	*Mean Differe -nce*	*SD*	*"t" Value*	*Significance*
Depression	Pre test	14.1	47	26	4.92	8.67*	**Significant P<0.05**
	Post-test	6.36	21				
Anxiety	Pre test	10.2	34	18.4	4.07	7.38*	**Significant P<0.05**
	Post-test	4.73	15.6				
Stress	Pre test	10.9	36.3	19.3	4.23	7.57*	**Significant P<0.05**
	Post-test	*5.1*	*17*				

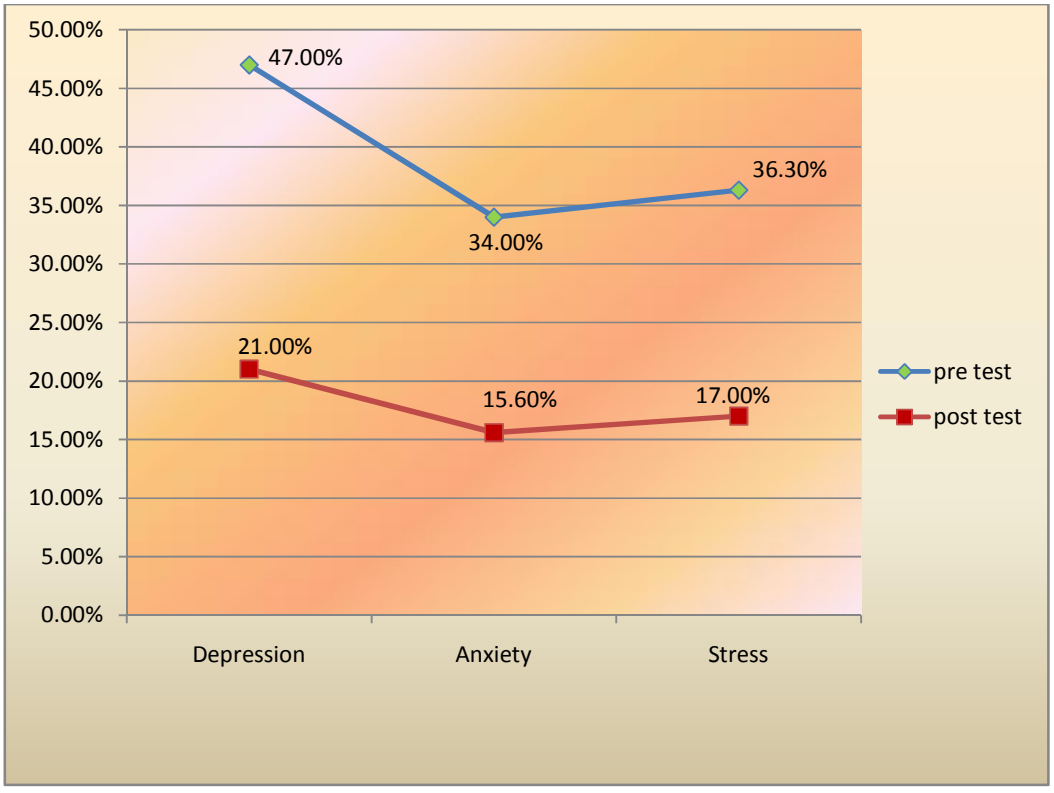


Figure 15 - Comparing the mean scores of the components in the pre test and the Post-test in experimental group

The line diagram shows the mean scores of Post-test were lesser than the mean scores of the pre test in all the components in experimental group.

The pre test mean percentage for cancer patients receiving radiation therapy in experimental group was highest for depression (47%) and lowest for anxiety (34%). The mean percentage for stress was slightly higher than anxiety (36.3%). Whereas the Post-test mean percentage for cancer patients in experimental group among 3 components, the highest mean percentage was obtained for depression 21% and the lowest mean percentage was obtained for anxiety 15.60%. The mean percentage for stress was found to be 17%.

Further, the paired 't' test was used to find the significant difference between the pre test and posttest depression, anxiety and stress scores in experimental group.

Table 12 shows the't' value obtained for all the three components that is depression, anxiety and stress were significant at $P<0.05$. Hence there is significant difference between the Pre-test and Post-test score of depression , anxiety and stress and that difference was due to practice of guided imagery technique, in experimental group. Therefore it can be inferred that Guided Imagery Technique is effective in reducing the level of depression, anxiety and stress in cancer patients receiving radiation therapy.

Table 15*:* **Comparing the Mean Scores of the Components between the Pre-test and the Post-test in Control Group**

Component	*Observation*	*Mean*	*Mean%*	*Mean Differe -nce*	*SD*	*"t" Value*	*Significance*
Depression	Pre-test	14.8	49.3	-1	4.2	0.38	Not significant P<0.05
	Posttest	15.1	50.3				
Anxiety	Pre-test	11.0	36.6	-1	3.6	0.50	Not significant P<0.05
	Posttest	11.3	37.6				
Stress	Pre-test	13.1	43.6	-1	3.4	0.47	Not significant P<0.05
	Posttest	*13.4*	*44.6*				

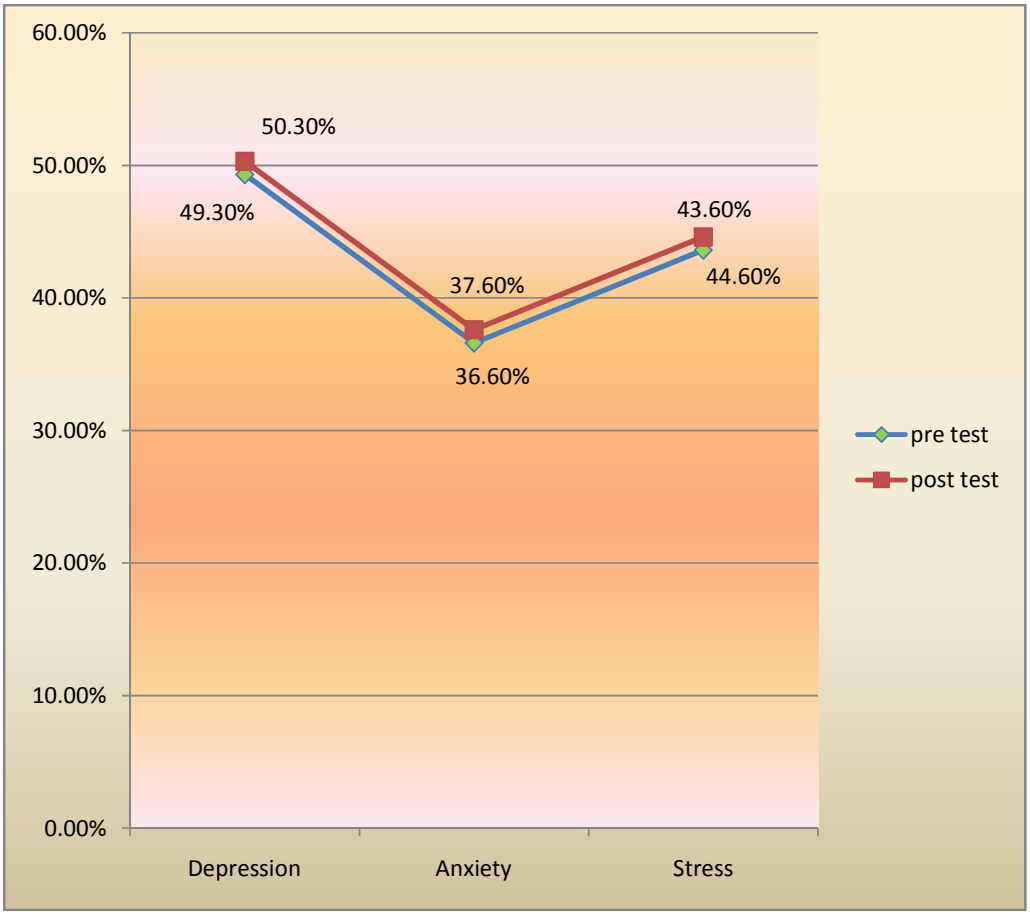


Figure 16 - Comparing the Mean Scores of the components in the Pre-test and the Post-test in control group

The line diagram shows there is fluctuation in the mean scores of post-test and the mean scores of the Pre-test in the depression, anxiety and stress of the cancer patients in control group.

The Pre-test mean percentage for cancer patients in control group was highest for depression 49.30% and the lowest mean percentage was obtained for anxiety36.6%. The mean percentage for stress was found to be 43.60%. Whereas in the Post-test mean percentage for cancer patients, the highest mean percentage was obtained for depression 50.3% and the lowest mean percentage was obtained for anxiety 43.6%. The mean percentage for stress was found to be 44.60%.

Further, the paired‘t’ test was used to find the significant difference between the pre test and post-test levels depression, anxiety and stress scores. The findings revealed that there was no significant difference between the pre test and Post-test level of depression, anxiety and stress at $P<0.05$ level.

SECTION – IV

COMPARISON OF POST-TEST SCORES OF DEPRESSION, ANXIETY AND STRESS AMONG CANCER PATIENTS RECEIVING RADIATION THERAPY IN EXPERIMENTAL GROUP AND CONTROL GROUP.

The effectiveness of the guided imagery technique was tested by using unpaired 't' test to analyze the difference in Post-test scores of depression, anxiety and stress in experimental and control group.

Table16 - Comparison of Post-test Scores of Depression in Experimental and Control Group (N=60)

GROUP	Level of depression	Mean	S.D	Unpaired 't' value
Experimental n_1=30	**Post-test**	6.36	2.98	*9.93
Control n_2=30	**Post test**	15.1	4.25	

*** Significant at 0.05 level, df (58) (t=1.671)**

The data presented in **Table16,** explains the analysis of unpaired 't' test to analyze the different between mean post-test score of depression among cancer patients receiving radiation therapy in experimental and control group. The mean of post-test value of experimental group 6.36 which is lower than the Post-test value 15.1 of control group. The obtained 't' value of 9.93, is higher when compared to the table value of 1.671 at 0.05 level. This implies that there is a significant reduction in the

level of depression in experimental group than control group. It indicates that guided imagery technique was effective in reducing depression among cancer patients receiving radiation therapy in experimental group.

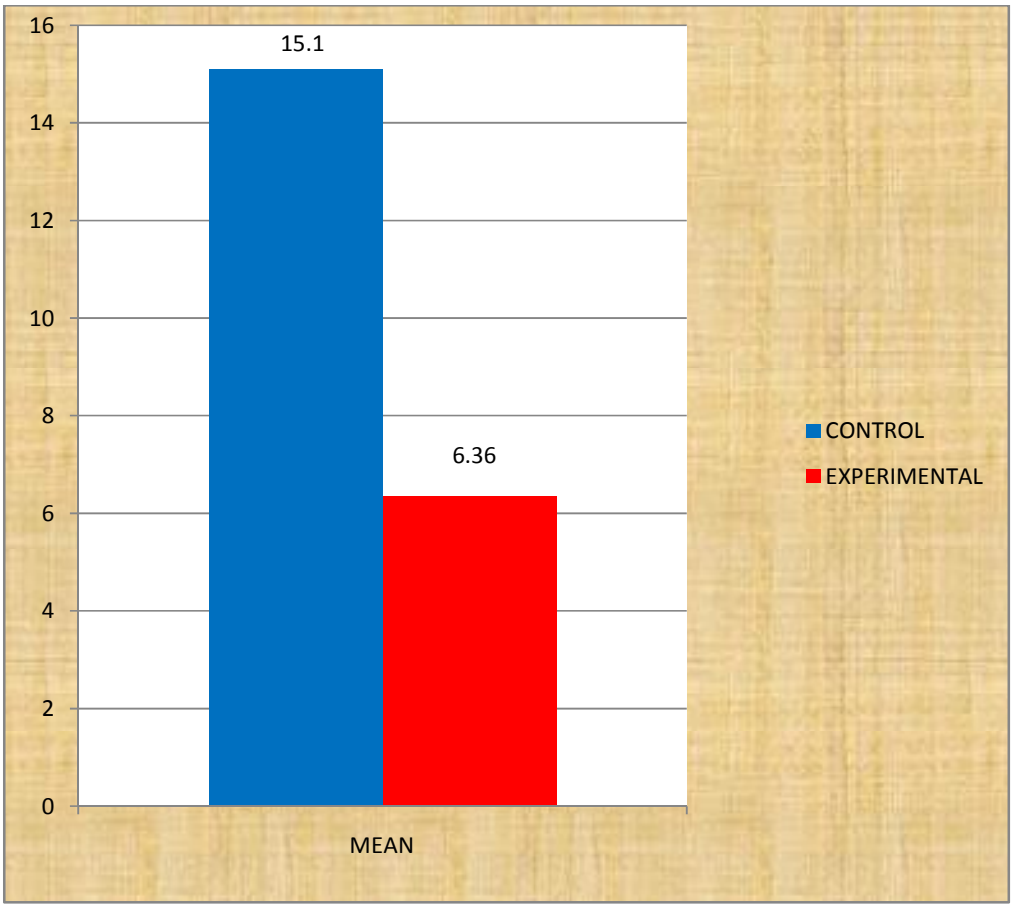


Figure 17 - Post-test mean score of depression among cancer patients in experimental and control group

Table 17 - Comparison of Post-test Scores of Anxiety in Experimental and Control Group (N=60)

GROUP	Level of depression	Mean	S.D	Unpaired 't' value
Experimental n_1=30	**Post-test**	4.73	1.99	*9.33
Control n_2=30	**Post test**	11.36	3.71	

*** Significant at 0.05 level, df (58) (t=1.671)**

The data presented in **Table17,** explains the analysis of unpaired 't' test to analyze the different between mean post-test score of anxiety among cancer patients receiving radiation therapy in experimental and control group. The mean of post-test value of experimental group 4.73 which is lower than the Post-test value 11.36 of control group. The obtained 't' value of 9.33, is higher when compared to the table value of 1.671 at 0.05 level. This implies that there is a significant reduction in the level of anxiety in experimental group than control group. It indicates that guided imagery technique was effective in reducing anxiety among cancer patients receiving radiation therapy in experimental group.

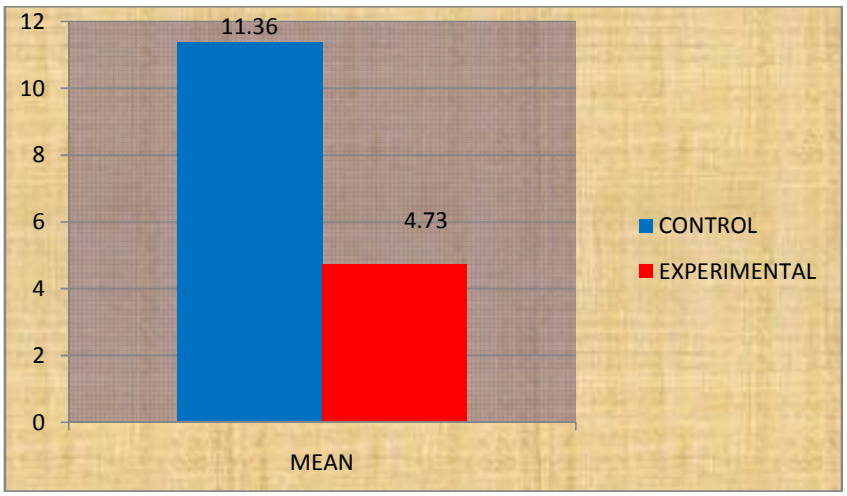


Figure 18 - Post-test mean score of anxiety among cancer patients in experimental and control group

Table 18 - Comparison of Post-test Scores of Stress In Experimental and Control Group (N=60)

GROUP	Level of depression	Mean	S.D	Unpaired 't' value
Experimental n_1=30	**Post-test**	5.1	2.49	*11.29
Control n_2=30	**Post test**	13.46	3.61	

*** Significant at 0.05 level, df (58) (t=1.671)**

The data presented in **Table18,** explains the analysis of unpaired 't' test to analyze the different between mean post-test score of stress among cancer patients receiving radiation therapy in experimental and control group. The mean of post-test value of experimental group 5.1 which is lower than the Post-test value 13.46 of control group. The obtained 't' value of 11.29, is higher when compared to the table value of 1.671 at 0.05 level. This implies that there is a significant reduction in the level of stress in experimental group than control group. It indicates that guided imagery technique was effective in reducing stress among cancer patients receiving radiation therapy in experimental group.

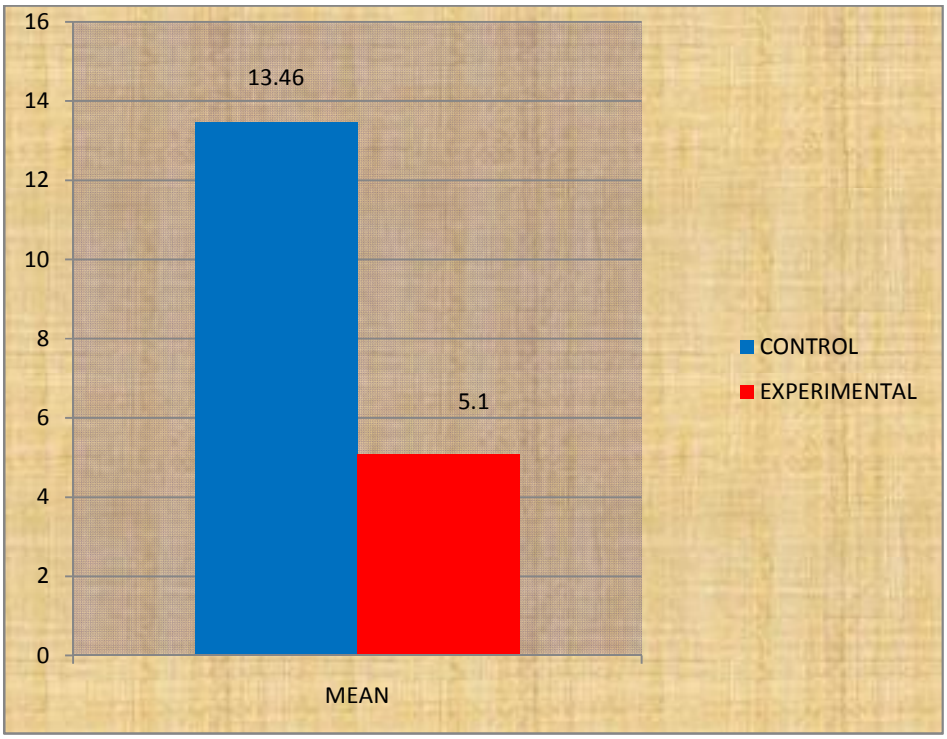


Figure 19 - Post-test mean score of stress among cancer patients in experimental and control group

Table 19 - Overall comparison of Post-test Scores of Depression, Anxiety and Stress among Cancer Patients Receiving Radiation Therapy

COMPONENTS	EXPERIMENTAL GROUP (N =30)		CONTROL GROUP (N=30)	
	Mean	S.D	Mean	S.D
Depression	6.36	2.98	15.1	4.25
Anxiety	4.73	1.99	11.36	3.71
Stress	5.1	2.49	13.46	3.61

Table 19 explains the overall comparison of the Post-test mean scores of depression, anxiety and stress in both the experimental and control group. The table shows that there is a significant difference in the Post-test scores of depression, anxiety and stress in experimental and control group. The overall Post-test mean score of the depression, anxiety and stress in experimental group is lesser than the Post-test mean scores of depression, anxiety and stress in control group. This implies that there is significant reduction in the level of depression, anxiety and stress in cancer patients receiving radiation therapy in experimental group. It indicates that Guided Imagery was effective in reducing the level of depression, anxiety and stress in cancer patients receiving radiation therapy.

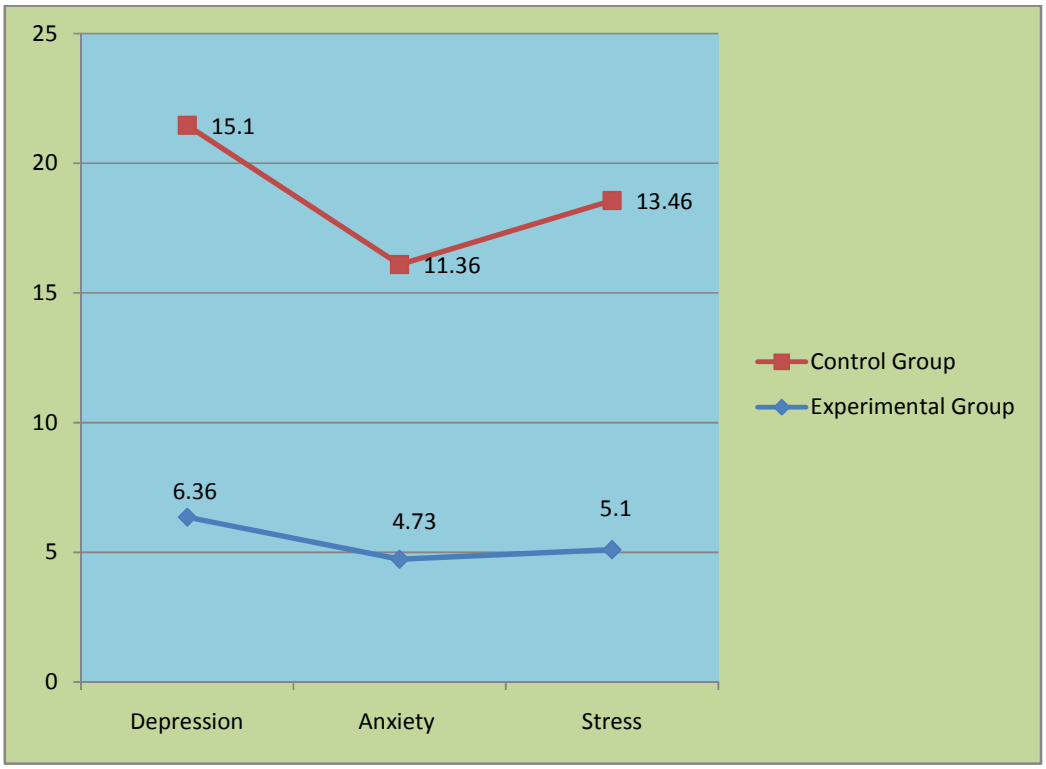


Figure 20 – Over all Post-test mean score of depression, anxiety and stress among cancer patients receiving radiation therapy in experimental and control group

SECTION V

ASSOCIATION BETWEEN PRE TEST SCORES OF DEPRESSION, ANXIETY AND STRESS IN EXPERIMENTAL AND CONTROL GROUP WITH SELECTED DEMOGRAPHIC VARIABLES

Table 20: Association between Pre Test Score of Depression and selected Demographic Variables in Experimental Group.

VARIABLE	FREQUENCY	PERCENT -AGE	df	CHI –SQ (Calculated Value)	CHI –SQ (Table Value)
AGE	**N = 30**	**%**	**8**	**16.48***	**15.50**
21 - 40	**4**	**14**			
41 - 60	**17**	**56**			
61- 80	**9**	**30**			
GENDER	**N = 30**	**%**	**4**	**15.15***	**9.48**
Male	**10**	**34**			
Female	**20**	**66**			
MARITAL STATUS	**N = 30**	**%**	**8**	**0**	**15.50**
Single	**0**	**0**			
Married	**30**	**100**			
Divorced	**0**	**0**			
EDUCATIONAL STATUS	**N = 30**	**%**	**4**	**12.39***	**9.48**
Literate	**12**	**40**			
Illiterate	**18**	**60**			
AWARENESS-DIAGNOSIS	**N = 30**	**%**	**4**	**9.79***	**9.48**

Yes	**23**	**77**			
No	**7**	**23**			
AWARENESS-PROGNOSIS	**N = 30**	**%**			
Yes	**22**	**73**	**4**	**10.26***	**9.48**
No	**8**	**27**			

*** Significant at 0.05 level**

From the above table it is evident that there is a significant association between Pre-test score of depression in cancer patients receiving radiation with most of the selected demographic variables in experimental group.

According to age χ^2= 16.48, were as the table value =15.50 which is less than the calculated value at P<0.05 level, it is evident that there is significant association between Pre-test score of depression in cancer patients receiving radiation therapy and age.

Regarding gender χ^2=15.15, were as the table value=9.48 which is less than the calculated value at P<0.05 level it is evident that there is significant association exist between Pre-test score of depression in cancer patients receiving radiation therapy and gender.

Related to educational status χ^2= 12.39 were as the table value = 9.48, is less than the calculated value at P<0.05 level it is evident that there is significant association exist between Pre-test score of depression in cancer patients receiving radiation therapy and educational status.

And regarding awareness of diagnosis χ^2=9.79 were as the table value= 9.48, which is less than the calculated value at P<0.05 level it is evident that there is significant

association exist between Pre-test score of depression in cancer patients receiving radiation therapy and awareness of diagnosis.

And regarding awareness of prognosis χ^2= 10.26 were as the table value= 9.48, which is less than the calculated value at P<0.05 level, it is evident that there is significant association between Pre-test score of depression in cancer patients receiving radiation therapy and awareness of prognosis.

There was no significant association between Pre-test score of depression in cancer patients receiving radiation therapy and selected demographic variable like marital status. This shows that degree of depression was dependent on most of the selected demographic variables in experimental group.

Table 21. Association between Pre Test Score of Anxiety and Selected Demographic Variables in Experimental Group.

VARIABLE	FREQUENCY	PERCEN-TAGE	df	CHI –SQ (Calculated V)	CHI –SQ (Table V)
AGE	N = 30	%	8	15.89*	15.50
21 - 40	4	14			
41 - 60	17	56			
61- 80	9	30			
GENDER	N = 30	%	4	9.73*	9.48
Male	10	34			
Female	20	66			
MARITAL STATUS	N = 30	%	8	0	15.50
Single	0	0			
Married	30	100			
Divorced	0	0			

EDUCATIONAL STATUS	**N = 30**	**%**	**4**	**12.35***	**9.48**
Literate	**12**	**40**			
Illiterate	**18**	**60**			
AWARENESS-DIAGNOSIS	**N = 30**	**%**	**4**	**10.96***	**9.48**
Yes	**23**	**77**			
No	**7**	**23**			
AWARENESS-PROGNOSIS	**N = 30**	**%**	**4**	**12.44***	**9.48**
Yes	**22**	**73**			
No	**8**	**27**			

*** Significant at 0.05 level**

From the above table it is evident that there is a significant association between Pre-test score of anxiety in cancer patients receiving radiation with most of the selected demographic variables in experimental group.

According to age χ^2= 15.89, were as the table value =15.50 which is less than the calculated value at P<0.05 level, it is evident that there is significant association between Pre-test score of anxiety in cancer patients receiving radiation therapy and age.

Regarding gender χ^2=9.73, were as the table value=9.48 which is less than the calculated value at P<0.05 level it is evident that there is significant association exist between Pre-test score of anxiety in cancer patients receiving radiation therapy and gender.

Related to educational status χ^2= 12.35 were as the table value = 9.48, is less than the calculated value at P<0.05 level it is evident that there is significant association exist between Pre-test score of anxiety in cancer patients receiving radiation therapy and educational status.

And regarding awareness of diagnosis χ^2= 10.96 were as the table value= 9.48, which is less than the calculated value at P<0.05 level it is evident that there is significant association exist between Pre-test score of anxiety in cancer patients receiving radiation therapy and awareness of diagnosis.

And regarding awareness of prognosis χ^2= 12.44 were as the table value= 9.48, which is less than the calculated value at P<0.05 level, it is evident that there is significant association between Pre-test score of anxiety in cancer patients receiving radiation therapy and awareness of prognosis.

There was no significant association between Pre-test score of anxiety in cancer patients receiving radiation therapy and selected demographic variable like marital status. This shows that degree of anxiety was dependent on most of the selected demographic variables in experimental group.

Table 22: Association between Pre-test Score of Stress and Selected Demographic Variables in Experimental Group.

VARIABLE	FREQUENCY	PERCENT -AGE	df	CHI –SQ (Calculated V)	CHI –SQ (Table V)
AGE	**N = 30**	**%**			
21 - 40	**4**	**14**	**8**	**16.18***	**15.50**
41 - 60	**17**	**56**			
61- 80	**9**	**30**			
GENDER	**N = 30**	**%**	**4**	**12.5***	**9.48**

Male	**10**	**34**			
Female	**20**	**66**			
MARITAL STATUS	**N = 30**	**%**	**8**	**0**	**15.50**
Single	**0**	**0**			
Married	**30**	**100**			
Divorced	**0**	**0**			
EDUCATIONAL STATUS	**N = 30**	**%**	**4**	**9.89***	**9.48**
Literate	**12**	**40**			
Illiterate	**18**	**60**			
AWARENESS-DIAGNOSIS	**N = 30**	**%**	**4**	**11.31***	**9.48**
Yes	**23**	**77**			
No	**7**	**23**			
AWARENESS-PROGNOSIS	**N = 30**	**%**	**4**	**9.94***	**9.48**
Yes	**22**	**73**			
No	**8**	**27**			

*** Significant at 0.05 level**

From the above table it is evident that there is a significant association between Pre-test score of stress in cancer patients receiving radiation with most of the selected demographic variables in experimental group.

According to age χ^2= 16.18, were as the table value =15.50 which is less than the calculated value at P<0.05 level, it is evident that there is significant association between Pre-test score of stress in cancer patients receiving radiation therapy and age.

Regarding gender χ^2= 12.5, were as the table value=9.48 which is less than the calculated value at P<0.05 level it is evident that there is significant association exist between Pre-test score of stress in cancer patients receiving radiation therapy and gender.

Related to educational status χ^2= 9.89 were as the table value = 9.48, is less than the calculated value at P<0.05 level it is evident that there is significant association exist between Pre-test score of stress in cancer patients receiving radiation therapy and educational status.

And regarding awareness of diagnosis χ^2= 11.31 were as the table value= 9.48, which is less than the calculated value at P<0.05 level it is evident that there is significant association exist between Pre-test score of stress in cancer patients receiving radiation therapy and awareness of diagnosis.

And regarding awareness of prognosis χ^2= 9.94 were as the table value= 9.48, which is less than the calculated value at P<0.05 level, it is evident that there is significant association between Pre-test score of stress in cancer patients receiving radiation therapy and awareness of prognosis.

There was no significant association between Pre-test score of stress in cancer patients receiving radiation therapy and selected demographic variable like marital status. This shows that degree of stress was dependent on most of the selected demographic variables in experimental group.

Table 23: Association between Pre-test Score of Depression and Selected Demographic Variables in Control Group.

VARIABLE	FREQUENCY	PERCENT -AGE	df	CHI – SQ (Calculated V)	CHI –SQ (Table V)
AGE	**N = 30**	**%**	**8**	**16.9***	**15.50**
21 - 40	**7**	**23**			
41 - 60	**17**	**57**			
61- 80	**6**	**20**			
GENDER	**N = 30**	**%**	**4**	**10.72***	**9.48**
Male	**9**	**30**			
Female	**21**	**70**			
MARITAL STATUS	**N = 30**	**%**	**8**	**16.48***	**15.50**
Single	**1**	**3**			
Married	**29**	**97**			
Divorced	**0**	**0**			
EDUCATIONAL STATUS	**N = 30**	**%**	**4**	**12.39***	**9.48**
Literate	**7**	**23**			
Illiterate	**23**	**77**			
AWARENESS-DIAGNOSIS	**N = 30**	**%**	**4**	**13.81***	**9.48**
Yes	**26**	**87**			
No	**4**	**13**			
AWARENESS-PROGNOSIS	**N = 30**	**%**	**4**	**10.30***	**9.48**
Yes	**27**	**90**			
No	**3**	**10**			

***Significant at 0.05 level**

From the above table it is evident that there is a significant association between Pre-test score of depression in cancer patients receiving radiation with most of the selected demographic variables in control group.

According to age χ^2= 16.9, were as the table value =15.50 which is less than the calculated value at P<0.05 level, it is evident that there is significant association between Pre-test score of depression in cancer patients receiving radiation therapy and age.

Regarding gender χ^2=10.72, were as the table value=9.48 which is less than the calculated value at P<0.05 level it is evident that there is significant association exist between Pre-test score of depression in cancer patients receiving radiation therapy and gender.

Regarding marital status χ^2=16.48, were as the table value= 15.50 which is less than the calculated value at P<0.05 level it is evident that there is significant association exist between Pre-test score of depression in cancer patients receiving radiation therapy and marital status.

Related to educational status χ^2= 12.39 were as the table value = 9.48, is less than the calculated value at P<0.05 level it is evident that there is significant association exist between Pre-test score of depression in cancer patients receiving radiation therapy and educational status.

And regarding awareness of diagnosis χ^2=13.81 were as the table value= 9.48, which is less than the calculated value at P<0.05 level it is evident that there is significant association exist between Pre-test score of depression in cancer patients receiving radiation therapy and awareness of diagnosis.

And regarding awareness of prognosis χ^2= 10.30 were as the table value= 9.48, which is less than the calculated value at P<0.05 level, it is evident that there is significant association between Pre-test score of depression in cancer patients receiving radiation therapy and awareness of prognosis.

This shows that degree of depression was dependent on all of the selected demographic variables in control group.

Table 24: Association between Pre-test score of Anxiety and selected Demographic Variables in Control Group.

VARIABLE	FREQUENCY	PERCENT -AGE	df	CHI – SQ (Calculated V)	CHI –SQ (Table V)
AGE	N = 30	%	8	16.19*	15.50
21 - 40	7	23			
41 - 60	17	57			
61- 80	6	20			
GENDER	N = 30	%	4	10.97*	9.48
Male	9	30			
Female	21	70			
MARITAL STATUS	N = 30	%	8	17.07*	15.50
Single	1	3			
Married	29	97			
Divorced	0	0			
EDUCATIONAL STATUS	N = 30	%	4	12.35*	9.48
Literate	7	23			
Illiterate	23	77			

AWARENESS-DIAGNOSIS	**N = 30**	**%**	**4**	**10.34***	**9.48**
Yes	**26**	**87**			
No	**4**	**13**			
AWARENESS-PROGNOSIS	**N = 30**	**%**	**4**	**13.89***	**9.48**
Yes	**27**	**90**			
No	**3**	**10**			

***Significant at 0.05 level**

From the above table it is evident that there is a significant association between Pre-test score of anxiety in cancer patients receiving radiation with most of the selected demographic variables in control group.

According to age χ^2= 16.19, were as the table value =15.50 which is less than the calculated value at P<0.05 level, it is evident that there is significant association between Pre-test score of anxiety in cancer patients receiving radiation therapy and age.

Regarding gender χ^2=10.97, were as the table value=9.48 which is less than the calculated value at P<0.05 level it is evident that there is significant association exist between Pre-test score of anxiety in cancer patients receiving radiation therapy and gender.

Regarding marital status χ^2=17.07, were as the table value= 15.50 which is less than the calculated value at P<0.05 level it is evident that there is significant association exist between Pre-test score of anxiety in cancer patients receiving radiation therapy and marital status

Related to educational status χ^2= 12.35 were as the table value = 9.48, is less than the calculated value at P<0.05 level it is evident that there is significant association exist between Pre-test score of anxiety in cancer patients receiving radiation therapy and educational status.

And regarding awareness of diagnosis χ^2= 10.34 were as the table value= 9.48, which is less than the calculated value at P<0.05 level it is evident that there is significant association exist between Pre-test score of anxiety in cancer patients receiving radiation therapy and awareness of diagnosis.

And regarding awareness of prognosis χ^2= 13.89 were as the table value= 9.48, which is less than the calculated value at P<0.05 level, it is evident that there is significant association between Pre-test score of anxiety in cancer patients receiving radiation therapy and awareness of prognosis. This shows that degree of anxiety was dependent on all of the selected demographic variables in control group.

Table 25: Association between Pre-test Score of Stress and Selected Demographic Variables in Control Group.

VARIABLE	FREQUENCY	PERCENT -AGE	df	CHI –SQ (Calculated V)	CHI –SQ (Table V)
AGE	N = 30	%	8	16.45*	15.50
21 - 40	7	23			
41 - 60	17	57			
61- 80	6	20			
GENDER	N = 30	%	4	14.1*	9.48
Male	9	30			
Female	21	70			
MARITAL STATUS	N = 30	%	8	16.6*	15.50

Single	**1**	**3**			
Married	**29**	**97**			
Divorced	**0**	**0**			
EDUCATIONAL STATUS	**N = 30**	**%**			
Literate	**7**	**23**	**4**	**12.39***	**9.48**
Illiterate	**23**	**77**			
AWARENESS-DIAGNOSIS	**N = 30**	**%**			
Yes	**26**	**87**	**4**	**10.48***	**9.48**
No	**4**	**13**			
AWARENESS-PROGNOSIS	**N = 30**	**%**			
Yes	**27**	**90**	**4**	**10.86***	**9.48**
No	**3**	**10**			

***Significant at 0.05 level**

From the above table it is evident that there is a significant association between Pre-test score of stress in cancer patients receiving radiation with most of the selected demographic variables in control group.

According to age χ^2= 16.45, were as the table value =15.50 which is less than the calculated value at P<0.05 level, it is evident that there is significant association between Pre-test score of stress in cancer patients receiving radiation therapy and age.

Regarding gender χ^2= 14.1, were as the table value=9.48 which is less than the calculated value at P<0.05 level it is evident that there is significant association exist between Pre-test score of stress in cancer patients receiving radiation therapy and gender.

Regarding marital status χ^2=16.6, were as the table value= 15.50 which is less than the calculated value at P<0.05 level it is evident that there is significant association exist between Pre-test score of stress in cancer patients receiving radiation therapy and marital status

Related to educational status χ^2= 12.39 were as the table value = 9.48, is less than the calculated value at P<0.05 level it is evident that there is significant association exist between Pre-test score of stress in cancer patients receiving radiation therapy and educational status.

And regarding awareness of diagnosis χ^2= 10.48 were as the table value= 9.48, which is less than the calculated value at P<0.05 level it is evident that there is significant association exist between Pre-test score of stress in cancer patients receiving radiation therapy and awareness of diagnosis.

And regarding awareness of prognosis χ^2= 10.86 were as the table value= 9.48, which is less than the calculated value at P<0.05 level, it is evident that there is significant association between Pre-test score of stress in cancer patients receiving radiation therapy and awareness of prognosis.

This shows that degree of stress was dependent on all of the selected demographic variables in control group.

CHAPTER V

DISCUSSION

This chapter deals with the discussion which was based on the findings obtained from the statistical analysis and its relation to the objectives of the study, the conceptual frame work and the related literature.

The aim of the study was to assess the effectiveness of guided imagery technique on depression, anxiety and stress among cancer patients receiving chemotherapy in Erode Cancer Centre at Erode.

Sample characteristics in Experimental and Control Group

According to **age,** 17 (56%) cancer patients in the experimental group were in the age group of 41-60 years**,** 9 (30%) of them were in the age group of 61-80 years, 4 (14%) cancer patients were in the age group of 21-40yrs. Whereas in the control group 17 (56%) cancer patients in the were in the age group of 41-60 years**,** 7 (23%) of them were in the age group of 21 -40 years, 6 (19%) cancer patients were in the age group of 61-80yrs. .

Regarding **gender**, 20 (665%) cancer patients in the experimental group were females and 10 (34%) of them were males. Similarly in the control group 21 (70%) cancer patients were females and 9 (30%) were males.

In relation to **marital status**, all 30 cancer patients (100%) were married in experimental group where as most of the cancer patients 29 (97%) were married and 1 cancer patient (3%) was single in control group. There were no divorcees in both experimental and control group

With regards to **education**, 18 (60%) cancer patients were illiterates in experimental group and 12 (40%) cancer patients were literates. Where as 23 of them (77%) were illiterates in the control group and 7 cancer patients (23%) were literates.

In relation to **awareness of diagnosis**, 23 (77%) cancer patients were aware of their diagnosis and 7 of them (23%) were unaware in experimental group. Similarly in control group 26 (87%) cancer patients were aware of their diagnosis and 4 (13%) of them were unaware of their in control group.

In relation to **awareness of prognosis,** 22 (73%) cancer patients were aware of their prognosis and 8 (27%) of them were unaware in experimental group. Similarly in the control group 27 (90%) of the cancer patients were aware of their prognosis and 3 (10%) of them were unaware of their prognosis.

OBJECTIVES OF THE STUDY

- To assess the pre test and Post-test level of depression, anxiety and stress among cancer patients receiving radiation therapy in both experimental and control group.
- To implement and evaluate the effectiveness of guided imagery technique on level of depression, anxiety and stress among cancer patients receiving radiation therapy.
- To find out the association between the pre test level of depression, anxiety and stress among cancer patients receiving radiation therapy with their selected demographic variables like age, gender, marital status, educational status, awareness of diagnosis and awareness of prognosis.

(1) The first objective was to assess the level of depression, anxiety and stress among cancer patients receiving radiation therapy in both experimental and control group

In this study it refers to lying in a calm and quiet environment, on flat surface, palms facing upward, with legs slightly apart, close the eyes, with the help of a therapist respond to one's verbal commands to guide the imagination for totally 30 cancer patients receiving radiation therapy, dividing them into 10 patients per session in three session for 3 weeks. Each 10 patients were given guided imagery technique for 30 minutes, twice in a day for one week.

The frequency and percentage of Pre-test and Post-test level of depression of cancer patients in experimental group. Majority of cancer patients in pre- test 18 of them (60%) had extremely severe depression, 6 of them (20%) had severe depression and 3 of them (10%) had moderate depression, 1 patient (3%) had mild depression and 2 of them (7%) had no depression respectively but in Post-test 19 of them (64%) had moderate depression, 9 of them (30%) had no depression and 1 of them (3%) had severe depression and 1 of them (3%) had mild depression respectively. None of them reported extremely severe depression in Post-test.

The frequency and percentage of Pre-test and Post-test level of anxiety of cancer patients in experimental group. Majority of cancer patients in pre- test 17 of them (56%) had extremely severe anxiety, 6 of them (20%) had severe anxiety and 4 of them (14%) had moderate anxiety, 2 of them (7%) had mild anxiety and 1 of them (3%) had no anxiety respectively but in Post-test 11 of them (36%) had moderate anxiety, 9 of them (30%) had no anxiety and 6 of them (20%) had mild anxiety and 4

of them (14%) had severe anxiety respectively. None of them reported extremely severe anxiety in Post-test.

The frequency and percentage of Pre-test and Post-test level of stress of cancer patients in experimental group. Majority of cancer patients in pre- test 12 of them (40%) had severe Stress, 7 of them (23%) had moderate Stress and 7 of them (23%) had mild Stress, 4 of them (14%) had no Stress and none of them had extremely severe Stress respectively but in Post-test 26 of them (87%) had no Stress, 3 of them (10%) had mild Stress and 1 of them (3%) had moderate Stress respectively. None of them reported severe and extremely severe Stress in Post-test.

The frequency and percentage of Pre-test and Post-test level of depression of cancer patients in control group. Majority of cancer patients in pre- test 19 of them (63%) had extremely severe depression, 6 of them (20%) had severe depression and 3 of them (10%) had moderate depression, 2 of them (7%) had mild depression respectively but in Post-test 19 of them (63%) had extremely severe depression, 7 of them (24%) had severe depression and 3 of them (10%) had moderate depression and 1 of them (3%) had mild depression respectively. None of them reported normal in pre test and Post-test.

The frequency and percentage of Pre-test and Post-test level of anxiety of cancer patients in control group. Majority of cancer patients in pre- test 21 of them (70%) had extremely severe anxiety, 3 of them (10%) had severe anxiety and 6 of them (20%) had moderate anxiety respectively but in Post-test 21 of them (70%) had extremely severe anxiety, 3 of them (10%) had severe anxiety and 6 of them (20%) had moderate anxiety respectively. None of them reported normal and mild anxiety in pre and Post-test.

The frequency and percentage of Pre-test and Post-test level of stress of cancer patients in control group. Majority of cancer patients in pre- test 17 of them (57%) had severe stress, 5 of them (17%) had moderate stress and 3 of them (10%) had extremely severe stress, 3 of them (10%) had mild stress 2 of them (6%) had no Stress respectively but in Post-test majority of the cancer patients 15 of them (50%) had severe Stress, 5 of them (17%) had extremely severe stress, 5 of them (17%) had moderate stress and 3 of them (10%) had mild stress, 2 of them (6%) reported no stress respectively.

2. **The second objective was to implement and evaluate the effectiveness of guided imagery technique on depression, anxiety and stress among cancer patients receiving radiation therapy.**

The Pre-test mean percentage for cancer patients receiving radiation therapy in experimental group was highest for depression (47%) and lowest for anxiety (34%). The mean percentage for stress was slightly higher than anxiety (36.3%). Whereas the Post-test mean percentage for cancer patients in experimental group among 3 components, the highest mean percentage was obtained for depression 21% and the lowest mean percentage was obtained for anxiety 15.60%. The mean percentage for stress was found to be 17%.

Further, the paired‘t’ test was used to find the significant difference between the pre test and post-test depression, anxiety and stress scores in experimental group. The ‘t’ value obtained for all the three components that is depression, anxiety and stress were significant at $P<0.05$.

Hence there is significant difference between the Pre-test and Post-test score of depression , anxiety and stress and that difference was due to practice of guided

imagery technique, in experimental group. Thus Guided Imagery is an effective technique in reducing depression, anxiety and stress among cancer patients receiving radiation therapy.

In control group the mean scores of post-test and the mean scores of the Pre-test in all the components of depression, anxiety and stress were not reduced as it was in experimental group.

In **control group** the Pre-test mean percentage for cancer patients in control group was highest for depression 49.30% and the lowest mean percentage was obtained for anxiety36.6%. The mean percentage for stress was found to be 43.60%. Whereas in the Post-test mean percentage for cancer patients, the highest mean percentage was obtained for depression 50.3% and the lowest mean percentage was obtained for anxiety 43.6%. The mean percentage for stress was found to be 44.60%.

Further, the paired‘t’ test was used to find the significant difference between the pre test and post-test levels depression, anxiety and stress. The findings revealed that there was no significant difference between the pre test and Post-test level of depression, anxiety and stress at $p < 0.05$ level of significance.

A comparison between post- test scores of depression **between experimental** 6.36 **and control group** 15.1 respectively and the‘t’ value 9.93 obtained was found to be significant at 0.05 level. These findings shows post-test score of depression was reduced in experimental group and not reduced in control group. Similarly a comparison between post- test scores of anxiety **between experimental** 4.73 **and control group** 11.36 respectively and the ‘t’ value 9.93 obtained was found to be significant at 0.05 level. Finally a comparison between post- test scores of stress **between experimental** 5.1 **and control group** 13.46 respectively and the ‘t’ value

11.29 obtained was found to be significant at 0.05 level. These findings shows at the post-test the depression, anxiety and stress level was reduced in experimental group and not reduced in control group. Thus it can be concluded that significant reduction of depression, anxiety and stress in experimental group was due to the effectiveness of guided imagery technique. So the researcher accept the research hypotheses.

An overall comparison of the Post-test mean scores of depression, anxiety and stress in both the experimental and control group was done. The findings show that there is a significant difference in the Post-test scores of depression, anxiety and stress in experimental and control group. The overall Post-test mean score of the depression, anxiety and stress in experimental group is lesser than the Post-test mean scores of depression, anxiety and stress in control group. This implies that there is significant reduction in the level of depression, anxiety and stress in cancer patients receiving radiation therapy in experimental group. It indicates that Guided Imagery was effective in reducing the level of depression, anxiety and stress in cancer patients receiving radiation therapy.

3. **The third objectives was to find out the association between the level of depression, anxiety and stress among cancer patients receiving radiation therapy with their selected demographic variables like age, gender, marital status, awareness of diagnosis, awareness of prognosis.**

Chi-square was calculated to find out the association between the level of depression, anxiety and stress among cancer patients receiving radiation therapy in experimental and control group with their selected demographic variables

In experimental group it is evident that there is significant association exist between depression in cancer patients receiving radiation therapy with the selected demographic variable, such as age (χ^2= 16.48) were as the table value = 15.50, gender (χ^2=15.15) were as the table value=9.48, educational status (χ^2=12.39) were as the table value = 9.48, awareness of diagnosis (χ^2= 9.79) were as the table value= 9.48, awareness of prognosis (χ^2= 10.26) were as the table value = 9.48. The table values of these variables are less than the calculated value at 0.05 levels, so the researcher accepts the research hypotheses for these variables.

Similarly **in experimental group** it is evident that there is significant association exist between anxiety in cancer patients receiving radiation therapy with the selected demographic variable, such as age (χ^2= 15.89) were as the table value = 15.50, gender (χ^2= 9.73) were as the table value=9.48, educational status (χ^2=12.35) were as the table value = 9.48, awareness of diagnosis (χ^2= 10.96) were as the table value= 9.48, awareness of prognosis (χ^2= 12.44) were as the table value = 9.48. The table values of these variables are less than the calculated value at 0.05 levels, so the researcher accepts the research hypotheses for these variables.

Finally **in experimental group** it is evident that there is significant association exist between stress in cancer patients receiving radiation therapy with the selected demographic variable, such as age (χ^2= 16.18) were as the table value = 15.50, gender (χ^2= 12.5) were as the table value=9.48, educational status (χ^2= 9.89) were as the table value = 9.48, awareness of diagnosis (χ^2= 11.31) were as the table value= 9.48, awareness of prognosis (χ^2= 9.94) were as the table value = 9.48. The table values of these variables are less than the calculated value at 0.05 levels, so the researcher accepts the research hypotheses for these variables.

There was no significant association between marital status and depression, anxiety and stress among cancer patients receiving radiation therapy at P<0.05.

In control group it is evident that there is significant association exist between depression in cancer patients receiving radiation therapy with the selected demographic variable, such as age (χ^2= 16.9) were as the table value = 15.50, gender (χ^2=10.72) were as the table value=9.48, marital status (χ^2= 16.48) were as the table value = 15.50 educational status (χ^2=12.39) were as the table value = 9.48, awareness of diagnosis (χ^2= 13.81) were as the table value= 9.48, awareness of prognosis (χ^2= 10.30) were as the table value = 9.48. The table values of these variables are less than the calculated value at 0.05 levels, so the researcher accepts the research hypotheses for these variables.

Similarly **in control group** it is evident that there is significant association exist between anxiety in cancer patients receiving radiation therapy with the selected demographic variable, such as age (χ^2= 16.19) were as the table value = 15.50, gender (χ^2= 10.97) were as the table value=9.48, marital status (χ^2= 17.07) were as the table value = 15.50, educational status (χ^2= 12.35) were as the table value = 9.48, awareness of diagnosis (χ^2= 10.34) were as the table value= 9.48, awareness of prognosis (χ^2= 13.89) were as the table value = 9.48. The table values of these variables are less than the calculated value at 0.05 levels, so the researcher accepts the research hypotheses for these variables.

Finally **in control group** it is evident that there is significant association exist between stress in cancer patients receiving radiation therapy with the selected demographic variable, such as age (χ^2= 16.45) were as the table value = 15.50, gender (χ^2= 14.1) were as the table value=9.48, marital status (χ^2= 16.6) were as the table

value = 15.50, educational status (χ^2= 12.39) were as the table value = 9.48, awareness of diagnosis (χ^2= 10.48) were as the table value= 9.48, awareness of prognosis (χ^2= 10.86) were as the table value = 9.48. The table values of these variables are less than the calculated value at 0.05 levels, so the researcher accepts the research hypotheses for these variables.

There was no significant association between Pre-test score of depression, anxiety and stress among cancer patients receiving radiation therapy in experimental group and selected demographic variable like marital status.

CHAPTER VI

SUMMARY, CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

This chapter deals with the summary of the study, its findings, conclusion and the implications for nursing administration, the health care delivery system (nursing practice), nursing education and nursing research. This study has been started with a few limitations and ends with suggestions and recommendations for research in future.

SUMMARY

The present study was undertaken by the researcher with the main purpose to evaluate the effectiveness of guided imagery technique on depression, anxiety and stress among cancer patients receiving radiation therapy in Erode Cancer Centre at Erode.

The study was quasi experimental in nature.

OBJECTIVES OF THE STUDY

- To assess the pre test and Post-test level of depression, anxiety and stress among cancer patients receiving radiation therapy in both experimental and control group.
- To implement and evaluate the effectiveness of guided imagery technique on level of depression, anxiety and stress among cancer patients receiving radiation therapy.
- To find out the association between the pre test level of depression, anxiety and stress among cancer patients receiving radiation therapy with their

selected demographic variables like age, gender, marital status, educational status, awareness of diagnosis and awareness of prognosis.

HYPOTHESES

H1: Guided Imagery technique will be effective in reducing depression, anxiety and stress among cancer patients receiving radiation therapy.

H2: There will be significant association between depression, anxiety and stress among cancer patients receiving radiation therapy with their selected demographic variables like age, gender, marital status, educational status, awareness of diagnosis and awareness of prognosis.

MAJOR FINDINGS

- As per demographic characteristic, majority of the cancer patients 17 (56%) were between age group of 41-60years in experimental group, 20 of them (66%) were females in experimental, all of them (100%) were married in experimental group, 18 of them (60%) were illiterates in experimental group, 23 of them (77%) were aware about their diagnosis in experimental group, and finally 22 of them (73%) had an awareness of prognosis in experimental group.

- The frequency and percentage of Pre-test and Post-test level of depression of cancer patients in experimental group. Majority of cancer patients in pre- test 18 of them (60%) had extremely severe depression, 6 of them (20%) had severe depression and 3 of them (10%) had moderate depression, 1 patient (3%) had mild depression and 2 of them (7%) had no depression respectively but in Post-

test 19 of them (64%) had moderate depression, 9 of them (30%) had no depression and 1 of them (3%) had severe depression and 1 of them (3%) had mild depression respectively. None of them reported extremely severe depression in Post-test.

- The frequency and percentage of Pre-test and Post-test level of anxiety of cancer patients in experimental group. Majority of cancer patients in pre- test 17 of them (56%) had extremely severe anxiety, 6 of them (20%) had severe anxiety and 4 of them (14%) had moderate anxiety, 2 of them (7%) had mild anxiety and 1 of them (3%) had no anxiety respectively but in Post-test 11 of them (36%) had moderate anxiety, 9 of them (30%) had no anxiety and 6 of them (20%) had mild anxiety and 4 of them (14%) had severe anxiety respectively. None of them reported extremely severe anxiety in Post-test.
- The frequency and percentage of Pre-test and Post-test level of stress of cancer patients in experimental group. Majority of cancer patients in pre- test 12 of them (40%) had severe Stress, 7 of them (23%) had moderate Stress and 7 of them (23%) had mild Stress, 4 of them (14%) had no Stress and none of them had extremely severe Stress respectively but in Post-test 26 of them (87%) had no Stress, 3 of them (10%) had mild Stress and 1 of them (3%) had moderate Stress respectively. None of them reported severe and extremely severe Stress in Post-test.
- The frequency and percentage of Pre-test and Post-test level of depression of cancer patients in control group. Majority of cancer patients in pre- test 19 of them (63%) had extremely severe depression, 6 of them (20%) had severe depression and 3 of them (10%) had moderate depression, 2 of them (7%) had mild depression respectively but in Post-test 19 of them (63%) had extremely

severe depression, 7 of them (24%) had severe depression and 3 of them (10%) had moderate depression and 1 of them (3%) had mild depression respectively. None of them reported normal in pre test and Post-test.

- The frequency and percentage of Pre-test and Post-test level of anxiety of cancer patients in control group. Majority of cancer patients in pre- test 21 of them (70%) had extremely severe anxiety, 3 of them (10%) had severe anxiety and 6 of them (20%) had moderate anxiety respectively but in Post-test 21 of them (70%) had extremely severe anxiety, 3 of them (10%) had severe anxiety and 6 of them (20%) had moderate anxiety respectively. None of them reported normal and mild anxiety in pre and Post-test.
- The frequency and percentage of Pre-test and Post-test level of stress of cancer patients in control group. Majority of cancer patients in pre- test 17 of them (57%) had severe stress, 5 of them (17%) had moderate stress and 3 of them (10%) had extremely severe stress, 3 of them (10%) had mild stress 2 of them (6%) had no Stress respectively but in Post-test majority of the cancer patients 15 of them (50%) had severe Stress, 5 of them (17%) had extremely severe stress, 5 of them (17%) had moderate stress and 3 of them (10%) had mild stress, 2 of them (6%) reported no stress respectively.
- The Pre-test mean percentage for cancer patients receiving radiation therapy in experimental group was highest for depression (47%) and lowest for anxiety (34%). The mean percentage for stress was slightly higher than anxiety (36.3%). Whereas the Post-test mean percentage for cancer patients in experimental group among 3 components, the highest mean percentage was obtained for depression 21% and the lowest mean percentage was obtained for anxiety 15.60%. The mean percentage for stress was found to be 17%. Further,

the paired ‘t’ test was used to find the significant difference between the pre test and post-test depression, anxiety and stress scores in experimental group.

- The Pre-test mean percentage for cancer patients in control group was highest for depression 49.30% and the lowest mean percentage was obtained for anxiety36.6%. The mean percentage for stress was found to be 43.60%. Whereas in the Post-test mean percentage for cancer patients, the highest mean percentage was obtained for depression 50.3% and the lowest mean percentage was obtained for anxiety 43.6%. The mean percentage for stress was found to be 44.60%. Further, the paired ‘t’ test was used to find the significant difference between the pre test and post-test levels depression, anxiety and stress scores and were found to be not significant at $P<0.05$.
- A comparison between post- test scores of depression **between experimental** 6.36 **and control group** 15.1 respectively and the ‘t’ value 9.93 obtained was found to be significant at 0.05 level. These findings shows post-test score of depression was reduced in experimental group and not reduced in control group. Similarly a comparison between post- test scores of anxiety **between experimental** 4.73 **and control group** 11.36 respectively and the ‘t’ value 9.93 obtained was found to be significant at 0.05 level. Finally a comparison between post- test scores of stress **between experimental** 5.1 **and control group** 13.46 respectively and the ‘t’ value 11.29 obtained was found to be significant at 0.05 level. These findings shows post-test score of depression, anxiety and stress was reduced in experimental group and not reduced in control group. Thus it can be concluded that significant reduction of depression, anxiety and stress score in experimental group might be due to the

effect of guided imagery technique, so the researcher accept the research hypotheses.

- Overall comparison of the Post-test mean scores of depression, anxiety and stress was done between experimental and control group. The findings show that there is a significant difference in the Post-test scores of depression, anxiety and stress in experimental and control group. The overall Post-test mean score of the depression, anxiety and stress in experimental group is lesser than the Post-test mean scores of depression, anxiety and stress in control group. This implies that there is significant reduction in the level of depression, anxiety and stress in cancer patients receiving radiation therapy in experimental group. It indicates that Guided Imagery was effective in reducing the level of depression, anxiety and stress in cancer patients receiving radiation therapy.
- **In experimental group** it is evident that there is significant association exist between depression in cancer patients receiving radiation therapy with the selected demographic variables, such as age (χ^2= 16.48) were as the table value = 15.50, gender (χ^2=15.15) were as the table value=9.48, educational status (χ^2=12.39) were as the table value = 9.48, awareness of diagnosis (χ^2= 9.79) were as the table value= 9.48, awareness of prognosis (χ^2= 10.26) were as the table value = 9.48. The table values of these variables are less than the calculated value at 0.05 levels, so the researcher accepts the research hypotheses for these variables.
- Similarly **in experimental group** it is evident that there is significant association exist between anxiety in cancer patients receiving radiation therapy with the selected demographic variables, such as age (χ^2= 15.89) were as the table value = 15.50, gender (χ^2= 9.73) were as the table value=9.48,

educational status (χ^2=12.35) were as the table value = 9.48, awareness of diagnosis (χ^2= 10.96) were as the table value= 9.48, awareness of prognosis (χ^2= 12.44) were as the table value = 9.48. The table values of these variables are less than the calculated value at 0.05 levels, so the researcher accepts the research hypotheses for these variables.

- Finally **in experimental group** it is evident that there is significant association exist between stress in cancer patients receiving radiation therapy with the selected demographic variables, such as age (χ^2= 16.18) were as the table value = 15.50, gender (χ^2= 12.5) were as the table value=9.48, educational status (χ^2= 9.89) were as the table value = 9.48, awareness of diagnosis (χ^2= 11.31) were as the table value= 9.48, awareness of prognosis (χ^2= 9.94) were as the table value = 9.48. The table values of these variables are less than the calculated value at 0.05 levels, so the researcher accepts the research hypotheses for these variables.

  There was no significant association between marital status and depression, anxiety and stress among cancer patients receiving radiation therapy at P<0.05.

- . **In control group** it is evident that there is significant association exist between depression in cancer patients receiving radiation therapy with the selected demographic variables, such as age (χ^2= 16.9) were as the table value = 15.50, gender (χ^2=10.72) were as the table value=9.48, marital status (χ^2= 16.48) were as the table value = 15.50 educational status (χ^2=12.39) were as the table value = 9.48, awareness of diagnosis (χ^2= 13.81) were as the table value= 9.48, awareness of prognosis (χ^2= 10.30) were as the table value = 9.48. The table values of these variables are less than the calculated value at 0.05 levels, so the researcher accepts the research hypotheses for these variables.

- Similarly **in control group** it is evident that there is significant association exist between anxiety in cancer patients receiving radiation therapy with the selected demographic variables, such as age (χ^2= 16.19) were as the table value = 15.50, gender (χ^2= 10.97) were as the table value=9.48, marital status (χ^2= 17.07) were as the table value = 15.50, educational status (χ^2= 12.35) were as the table value = 9.48, awareness of diagnosis (χ^2= 10.34) were as the table value= 9.48, awareness of prognosis (χ^2= 13.89) were as the table value = 9.48. The table values of these variables are less than the calculated value at 0.05 levels, so the researcher accepts the research hypotheses for these variables.
- Finally **in control group** it is evident that there is significant association exist between stress in cancer patients receiving radiation therapy with the selected demographic variables, such as age (χ^2= 16.45) were as the table value = 15.50, gender (χ^2= 14.1) were as the table value=9.48, marital status (χ^2= 16.6) were as the table value = 15.50, educational status (χ^2= 12.39) were as the table value = 9.48, awareness of diagnosis (χ^2= 10.48) were as the table value= 9.48, awareness of prognosis (χ^2= 10.86) were as the table value = 9.48. The table values of these variables are less than the calculated value at 0.05 levels, so the researcher accepts the research hypotheses for these variables.

CONCLUSION

The following conclusions were drawn from the study:

- There was significant reduction in Post-test level of depression, anxiety and stress when compared to Pre-test level among cancer patients receiving radiation therapy in experimental group
- In experimental group overall comparison between pre-test and post-test was found to be significant at $P<0.05$.
- There was significant association exist between depression, anxiety and stress in cancer patients receiving radiation therapy and the selected demographic variables like age, gender, marital status, educational status, awareness of diagnosis, awareness of prognosis and pre test scores of depression, anxiety and stress. And not significant for marital status in experimental group. This shows that degree of depression, anxiety and stress was dependent on most of the selected demographic variables of cancer patients receiving radiation therapy.

Therefore the study can be concluded that guided imagery technique can make a difference in reducing the level of depression, anxiety and stress among cancer patients receiving radiation therapy.

NURSING IMPLICATIONS

In the mental health team, nurses play a vital role in the provision of psychosocial therapies. The nurse knows that the cancer patients suffer from depression, anxiety and stress and it can be the baseline cause for associated disorders. Hence the guided imagery is a simple technique and easy way of handling the depression, anxiety and

stress. It can be included as a part of relaxation therapy; therefore this study has important implication in

1. Nursing practice

2. Nursing education

3. Nursing administration

4. Nursing research

IMPLICATIONS TO NURSING PRACTICE

1. Guided imagery can be given to cancer patients receiving radiation therapy in decreasing depression, anxiety and stress.
2. Guided imagery can be planned and given by staff as a non pharmacological intervention for their clients.
3. The nurses can identify the cancer patients receiving radiation therapy with mild, moderate, severe and extreme depression, anxiety and stress.
4. The nurse can educate the care givers about the techniques of guided imagery and its importance.
5. The nurse can give awareness to the public regarding depression, anxiety and stress among cancer patients receiving radiation therapy.
6. The study findings will enable the care givers of the cancer patients receiving radiation therapy to take part in active service.
7. Nurses are acting as the health promoters. They play an important role in educating care givers regarding importance of guided imagery in reducing depression, anxiety and stress.

IMPLICATIONS TO NURSING EDUCATION

1. Alternative and complementary therapies can be integrated as an adjuvant on to the existing therapies in the nursing curriculum.
2. Nurse educator can train and encourage the student nurses to utilize Guided imagery technique as complementary therapy in their professional life.
3. Guided imagery technique may be integrated in the psychiatric nursing programme.
4. Arrange for workshops for students to participate, so that they gain information about guided imagery in depression, anxiety and stress.
5. In-service education can be given to the nursing personnel regarding psychological problems of cancer patients receiving radiation therapy.
6. The nursing students must be prepared to provide structured teaching programmes on depression, anxiety and stress among cancer patients and its remedial measures to the care givers.
7. Nurse educators must arrange facilities and opportunities for special educators and nursing personnel to attend workshops and conferences to update their knowledge regarding the importance of guided imagery.

IMPLICATIONS TO NURSING ADMINISTRATION

(i) This study helps the nurse administrator to assess the knowledge of nurses regarding complementary therapies.

(ii) The nurse administrator can conduct in-service education program on Guided imagery in decreasing depression, anxiety and stress among cancer patients receiving radiation therapy.

(iii) This helps the nurse administrator to develop and provide an effective non-pharmacological measure for decreasing depression, anxiety and stress among cancer patients receiving radiation therapy.

(iv) Nurse administrator can create awareness among nurses that Guided imagery technique is a simple, nursing intervention in decreasing depression, anxiety and stress among cancer patients receiving radiation therapy.

(v) Nursing administrator can intimate the need for treating the cancer patients with depression, anxiety and stress through media, posters, pamphlets and hand outs.

(vi) Nurse administrator can encourage peripheral nurses to conduct health visit regularly for community to identify new cases of cancer patients with depression, anxiety and stress.

IMPLICATIONS TO NURSING RESEARCH

(i) The findings of the study increases the scope for expanding the quality of nursing service, In this area of evidence based practice, publication of this study will contribute a part for the improvement of profession.

(ii) Nurse researcher can do studies related to other beneficial effects of Guided imagery technique.

(iii) A comparative study can be done to determine the effectiveness of Guided imagery technique with other alternative therapies.

(iv) Similar study can be concluded on a large sample so it could be generalized.

(v) The study findings help to expand professional knowledge upon which further researchers can be conducted.

(vi) Based on the study, related studies can be done by the use of different other therapies.

(vii) The study findings will motivate to do further research on non pharmacological methods.

RECOMMENDATIONS FOR FUTURE RESEARCH

1. Replication of the study could be done with a larger sample to validate and generalize the findings
2. Study can be done with randominisation for better result.
3. The study can be done by maximizing the time period of guided imagery technique.
4. The study can be conducted to determine the effectiveness of guided imagery technique on specific types of cancer.
5. The study can be conducted among different group of patients in hospital and community settings.
6. Comparative study can be done to assess the effectiveness of guided imagery technique among different groups.

7. The study can be conducted using various research designs.

8. Guided imagery technique can be applied on the care givers of mentally ill patients to reduce depression, anxiety and stress.

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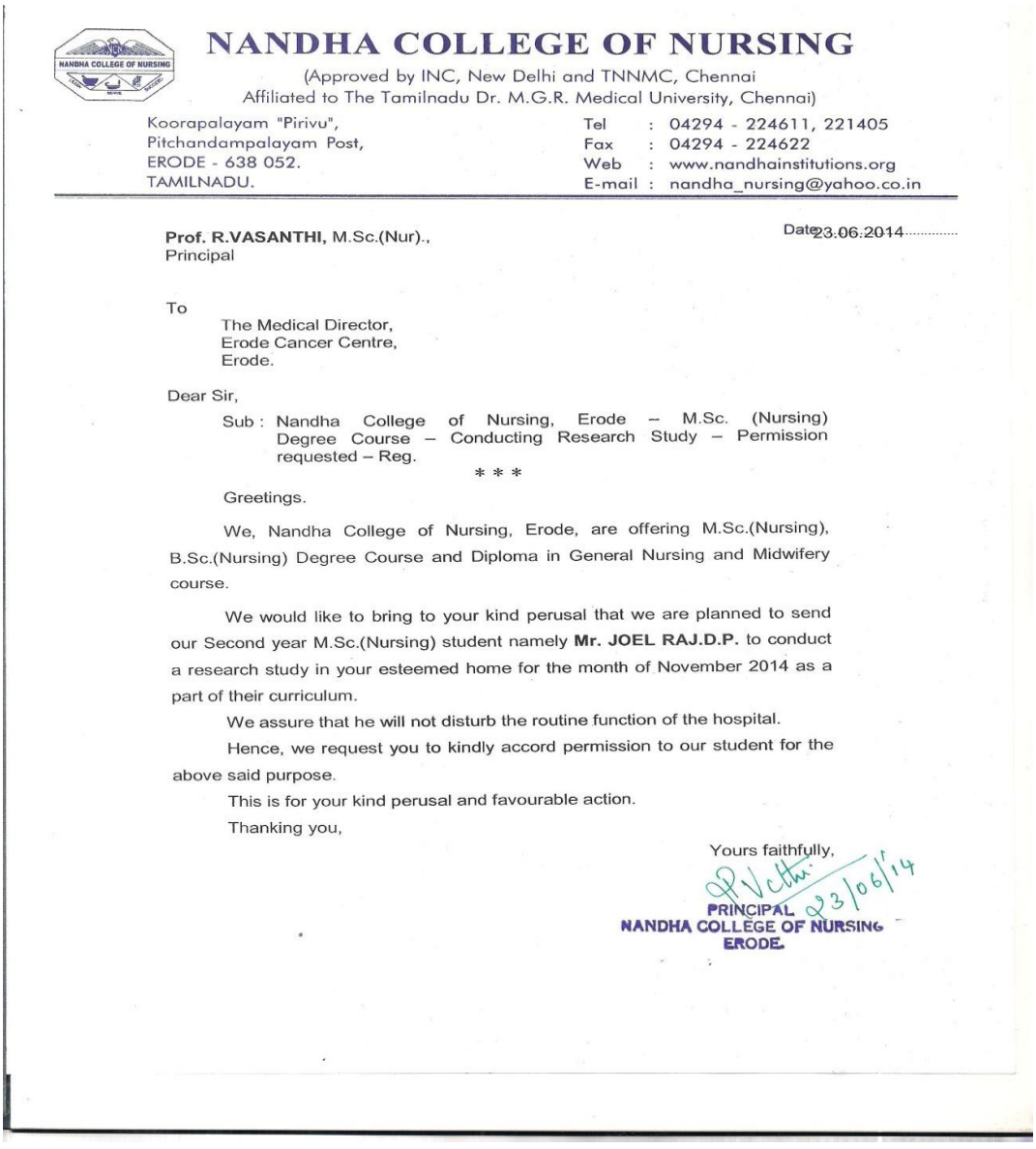
ANNEXURE – A

LETTER REQUESTING PERMISSION FOR CONDUCTING THE FINAL STUDY



NANDHA COLLEGE OF NURSING

(Approved by INC, New Delhi and TNNMC, Chennai
Affiliated to The Tamilnadu Dr. M.G.R. Medical University, Chennai)

Koorapalayam "Pirivu",
Pitchandampalayam Post,
ERODE - 638 052.
TAMILNADU.

Tel : 04294 - 224611, 221405
Fax : 04294 - 224622
Web : www.nandhainstitutions.org
E-mail : nandha_nursing@yahoo.co.in

Prof. R.VASANTHI, M.Sc.(Nur).,
Principal

Date 23.06.2014

To

The Medical Director,
Erode Cancer Centre,
Erode.

Dear Sir,

Sub : Nandha College of Nursing, Erode – M.Sc. (Nursing) Degree Course – Conducting Research Study – Permission requested – Reg.

* * *

Greetings.

We, Nandha College of Nursing, Erode, are offering M.Sc.(Nursing), B.Sc.(Nursing) Degree Course and Diploma in General Nursing and Midwifery course.

We would like to bring to your kind perusal that we are planned to send our Second year M.Sc.(Nursing) student namely **Mr. JOEL RAJ.D.P.** to conduct a research study in your esteemed home for the month of November 2014 as a part of their curriculum.

We assure that he will not disturb the routine function of the hospital.

Hence, we request you to kindly accord permission to our student for the above said purpose.

This is for your kind perusal and favourable action.

Thanking you,

Yours faithfully,

23/06/14

PRINCIPAL
NANDHA COLLEGE OF NURSING
ERODE.

LETTER GRANTING PERMISSION FOR CONDUCTING THE FINAL STUDY

Erode Cancer Centre
New Hope in Cancer Care

Erode Cancer Centre
Velavan Nagar, (Near Chinthamani Pertol Bunk) Perundurai Road,
Thindal, Erode - 638 012.

DR. K. VELAVAN M.D.R.T.,
Managing Director
Consultant Clinical Oncologist

Date :

Date: 01.9.2014

To

The Principal,
Nandha College of Nursing,
Koorapalayam pirivu,
Erode.

Respected Madam,

With reference to your office letter Mr.Joel Raj D.P, M.Sc., Nursing student, from Nandha college of nursing is permitted to do his data collection in Erode Cancer Centre during the month of November 2014.

Medical Director

Erode Cancer Centre

Ph.: 0424 - 2910700 / 2339704 Fax: 0424-2431802
Cell : +91 98423 34222 emial:kvels@rediffmail.com Web: erodecancercentre.com

ANNEXURE – B

LETTER SEEKING EXPERT OPINION ON VALIDITY OF THE TOOL

LETTER SEEKING EXPERT'S OPINION FOR CONTENT VALIDITY OF TOOLS

From:
D.P.Joel Raj
M.Sc., Nursing 2nd year,
Nandha college of Nursing,
Erode.

To
_____
_____
_____
_____

Through:
Professor R. Vasanthi,
The Principal,
Nandha College of nursing,
Erode.

SUB : Request expert's opinion on content validity of tool.

Respected Sir/Madam,

I am a final year Master of nursing student in Nandha College of Nursing. I have selected the under mentioned topic for research project to be submitted to the TAMILNADU DR.M.G.R. University Chennai, in partial fulfillment of university requirements for the award of Master of Nursing Degree.

Topic: "A study to evaluate the effectiveness of Guided Imagery technique on Depression, Anxiety and Stress among cancer patients receiving Radiation Therapy at selected hospital at Erode".

I request you to kindly go through these tool i.e., interview schedule for collecting Demographic data and standardized questionnaire to the effectiveness of Guided Imagery technique on Depression, Anxiety and Stress among cancer patients receiving Radiation Therapy at selected hospital at Erode" and give your valuable opinion and comments for any modification and improvement in the tool.

Thanking you,

Date:
Place:
Enclosed:

- Problem statement
- Tool
- Certificate of validation
- Tool validity check list.

Yours sincerely,
D.P.Joel Raj.

Signature of Principal mam

PRINCIPAL
NANDHA COLLEGE OF NURSING
ERODE.

CONTENT VALIDITY CERTIFICATES

CONTENT VALIDITY CERTIFICATE

I hereby certify that I have validated the tool of Mr. Joel Raj D P, M.Sc. [Nursing] II year student of Nandha College of Nursing, Erode and can proceed with this tool, and conduct the main study for dissertation entitled, **"A STUDY TO EVALUATE THE EFFECTIVENESS OF GUIDED IMAGERY TECHNIQUE ON DEPRESSION, ANXIETY AND STRESS AMONG CANCER PATIENTS RECEIVING RADIATION THERAPY IN SELECTED HOSPITAL AT ERODE".**

Place: Erode

Signature of the Expert 21/7/2014

Date: 21/07/2014

Name: Dr.V.N.ANANTHA KUMAR, MBBS.,DPM.,
Reg. No: 64055
Asst. Surgeon - Psychiatrist
Govt. Head Qtrs Hospital, ERODE.

Designation:

CONTENT VALIDITY CERTIFICATES

CONTENT VALIDITY CERTIFICATE

I hereby certify that I have validated the tool of Mr. Joel Raj D P, M.Sc. [Nursing] II year student of Nandha College of Nursing, Erode and can proceed with this tool, and conduct the main study for dissertation entitled, **"A STUDY TO EVALUATE THE EFFECTIVENESS OF GUIDED IMAGERY TECHNIQUE ON DEPRESSION, ANXIETY AND STRESS AMONG CANCER PATIENTS RECEIVING RADIATION THERAPY IN SELECTED HOSPITAL AT ERODE".**

Place: Bangalore

Date: 25.7.2014

Signature of the Expert

DR. RAMACHANDRA
Associate Professor
Dept. of Nursing
NIMHANS
BANGALORE - 560 029

Name:

Designation:

CONTENT VALIDITY CERTIFICATES

CONTENT VALIDITY CERTIFICATE

I hereby certify that I have validated the tool of Mr. Joel Raj D P, M.Sc. [Nursing] II year student of Nandha College of Nursing, Erode and can proceed with this tool, and conduct the main study for dissertation entitled, **"A STUDY TO EVALUATE THE EFFECTIVENESS OF GUIDED IMAGERY TECHNIQUE ON DEPRESSION, ANXIETY AND STRESS AMONG CANCER PATIENTS RECEIVING RADIATION THERAPY IN SELECTED HOSPITAL AT ERODE".**

Place: BANGALORE

Date: 3rd Aug '14

Signature of the Expert

Name: DEEPA SUBRAMANIAN

Designation: CONSULTANT PSYCHIATRIST
BANGALORE

CONTENT VALIDITY CERTIFICATES

CONTENT VALIDITY CERTIFICATE

I hereby certify that I have validated the tool of Mr. Joel Raj D P, M.Sc. [Nursing] II year student of Nandha College of Nursing, Erode and can proceed with this tool, and conduct the main study for dissertation entitled, **"A STUDY TO EVALUATE THE EFFECTIVENESS OF GUIDED IMAGERY TECHNIQUE ON DEPRESSION, ANXIETY AND STRESS AMONG CANCER PATIENTS RECEIVING RADIATION THERAPY IN SELECTED HOSPITAL AT ERODE".**

22/8/14

Place: B'lore

Date: 22/8/14

Signature of the Expert

Dr. N. KUSUM
PROFESSOR,
Nimhans College Of Nursing
BANGALORE - 29.

Name: Dr. N. Kusum

Designation: In charge Dept of Nursing NIMHANS B'lore 29

CONTENT VALIDITY CERTIFICATES

CONTENT VALIDITY CERTIFICATE

I hereby certify that I have validated the tool of Mr. Joel Raj D P, M.Sc. [Nursing] II year student of Nandha College of Nursing, Erode and can proceed with this tool, and conduct the main study for dissertation entitled, **"A STUDY TO EVALUATE THE EFFECTIVENESS OF GUIDED IMAGERY TECHNIQUE ON DEPRESSION, ANXIETY AND STRESS AMONG CANCER PATIENTS RECEIVING RADIATION THERAPY IN SELECTED HOSPITAL AT ERODE".**

Place:

Signature of the Expert

N. JAYAPRAKASH, M.Sc.,(Psy).,(DMHP)
PSYCHOLOGIST (NIMHANS TRAINED)
Govt. Head Quartres Hospitol
ERODE - 638 009.

Date: 02.08.2014

Name: JAYAPRAKASH.N

Designation: CL. PSYCHOLOGIST

ANNEXURE - C

CERTIFICATE BY THE EDITOR

CERTIFICATE BY THE EDITOR

This is to certify that the dissertation entitled **"A STUDY TO EVALUATE THE EFFECTIVENESS OF GUIDED IMAGERY TECHNIQUE ON DEPRESSION, ANXIETY AND STRESS AMONG CANCER PATIENTS RECEVING RADIATION THERAPY IN ERODE CANCER CENTRE AT ERODE"** is a bonafide research work by Mr. D.P. JOEL RAJ, II year M.Sc. (Nursing) student of Nandha College of Nursing, 29/4, Koorapalayam Pirivu, Pichandampalayam Post, Erode district. Edited this manuscript on behalf of the partial fulfillment of the prerequisite for the degree of Master of Science in Nursing (Psychiatric and Mental Health Nursing).

Signature of the Editor : E.V.R. Thenarasi

Name : E.V.R. THENARASI. M.A. B.Ed.

Designation : Teacher.

Date : 11.02.2015.

Seventh - Day Adventist
Matriculation High School
PATTAKKARAR THOTTAM
ERODE - 638 001

CERTIFICATE BY THE EDITOR

CERTIFICATE BY THE EDITOR

This is to certify that the dissertation entitled **"A STUDY TO EVALUATE THE EFFECTIVENESS OF GUIDED IMAGERY TECHNIQUE ON DEPRESSION, ANXIETY AND STRESS AMONG CANCER PATIENTS RECEVING RADIATION THERAPY IN ERODE CANCER CENTRE AT ERODE"** is a bonafide research work by Mr. D.P. JOEL RAJ, II year M.Sc. (Nursing) student of Nandha College of Nursing, 29/4, Koorapalayam Pirivu, Pichandampalayam Post, Erode district. Edited the guided imagery script in English on behalf of the partial fulfillment of the prerequisite for the degree of Master of Science in Nursing (Psychiatric and Mental Health Nursing).

Signature of the Editor : E.V.R. Thenarasi

Name : E.V.R. THENARASI. M.A. B.Ed.

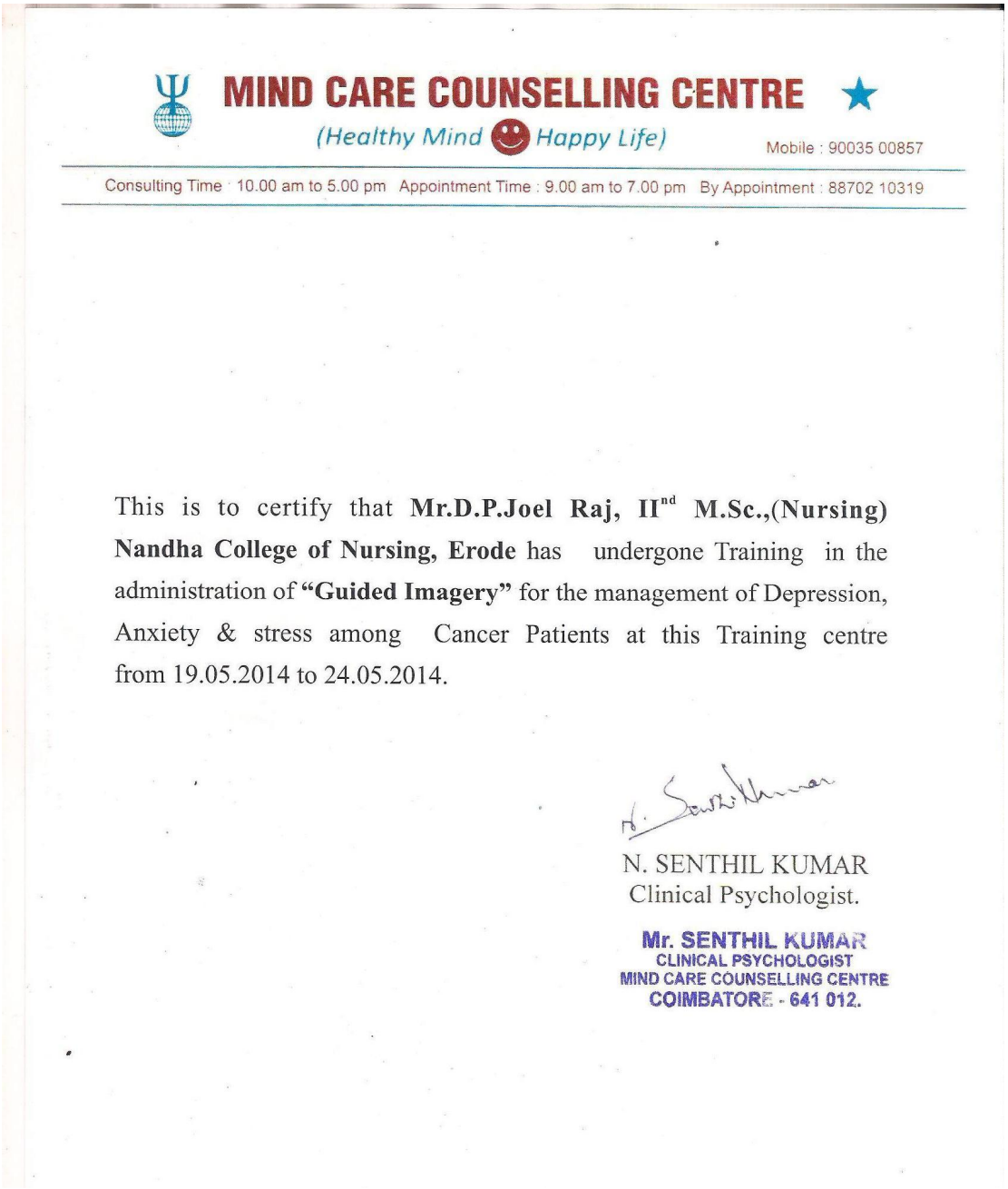
Designation : Teacher.

Date : 11.09.2014.

Seventh - Day Adventist
Matriculation High School
PATTAKKARAR THOTTAM
ERODE - 638 001

ANNXEXURE - D

GUIDED IMAGERY TRAINING CERTIFICATE



MIND CARE COUNSELLING CENTRE ★

(Healthy Mind ☺ Happy Life)

Mobile : 90035 00857

Consulting Time : 10.00 am to 5.00 pm Appointment Time : 9.00 am to 7.00 pm By Appointment : 88702 10319

This is to certify that **Mr.D.P.Joel Raj, II[nd] M.Sc.,(Nursing) Nandha College of Nursing, Erode** has undergone Training in the administration of **"Guided Imagery"** for the management of Depression, Anxiety & stress among Cancer Patients at this Training centre from 19.05.2014 to 24.05.2014.

N. SENTHIL KUMAR
Clinical Psychologist.

Mr. SENTHIL KUMAR
CLINICAL PSYCHOLOGIST
MIND CARE COUNSELLING CENTRE
COIMBATORE - 641 012.

ANNEXURE - E

SECTION - I

STRUCTURED INTERVIEW SCHEDULE

Instruction: Circle one from each group which suits you

Subject's code: ……

I. AGE: 1 2 3

1. 21 – 40 yrs
2. 41 – 60 yrs
3. 61 - 80 yrs

II. GENDER 1 2

1. Male
2. Female

III. MARITAL STATUS 1 2 3

1. Single
2. Unmarried
3. Divorced / Separated

IV. EDUCATIONAL STATUS 1 2

1. Literate
2. Illiterate

V. AWARENESS OF DIAGNOSIS 1 2

1. Yes
2. Not

VI. AWARENESS OF PROGNOSIS 1 2

1. Yes
2. No

SECTION - II

DASS21 *Name:* *Date:*

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

1	I found it hard to wind down	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5	I found it difficult to work up the initiative to do things	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I experienced trembling (eg, in the hands)	0	1	2	3
8	I felt that I was using a lot of nervous energy	0	1	2	3
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting agitated	0	1	2	3
12	I found it difficult to relax	0	1	2	3
13	I felt down-hearted and blue	0	1	2	3
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15	I felt I was close to panic	0	1	2	3
16	I was unable to become enthusiastic about anything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3
18	I felt that I was rather touchy	0	1	2	3

19	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life was meaningless	0	1	2	3

SCORING

The **Depression Anxiety and Stress Scale (DASS21)** consists of a set of 21 questions equally divided to measure depression, anxiety and stress. The minimum score is 0 and the maximum score for each component is 21. The scores are obtained by adding the numerical values.

TOTAL SCORE INTERPRETATION

	Depression	**Anxiety**	**Stress**
Normal	0-4	0-3	0-7
Mild	5-6	4-5	8-9
Moderate	7-10	6-7	10-12
Severe	11-13	8-9	13-16
Extremely Severe	14+	10+	17+

ANNEXURE – F

பகுதி - I

ஒருங்கமைக்கப்பட்ட நேர்காணல் திட்டம்

குறிப்பு : கீழ்காணும் காரியங்களில் சரியானவற்றை வட்டமிடவும். எண்:

I. வயது | 1 | 2 | 3 |

1) 21 - 40 வயது

2) 41 - 60 வயது

3) 61 - 80 வயது

II. பாலினம் | 1 | 2 |

1) ஆண்

2) பெண்

III. திருமண நிலை | 1 | 2 | 3 |

(1) திருமணமாகாதவர்

(2) திருமணமாகி சேர்ந்து வாழ்பவர்

(3) விதவை / விவாகரத்தானவர்

IV. கல்வி நிலை | 1 | 2 |

1) படித்தவர்

2) படிப்பறிவில்லாதவர்

V. வியாதி பற்றின விழிப்புணர்வு | 1 | 2 |

1) ஆமாம்

2) இல்லை

VI. வியாதி முண்கணிப்பிற்கான விழிப்புணர்வு | 1 | 2 |

1) ஆமாம்

2) இல்லை

பகுதி - II

டாஸ்-21 (மனச்சோர்வு, பதகளிப்பு, நெருக்கீடு என்பவற்றை மதிப்பிடும் அளவீடு)

பெயர்
:.....திகதி.....

தயவுசெய்து கீழே தரப்பட்டுள்ள ஒவ்வொரு வாக்கியத்தையும் வாசித்து கடந்த வாரத்தில் அது எவ்வளவு தூரம் உங்களுக்கு பெருத்தமாய் இருந்தது என்பதை காட்டும் வகையில் 0, 1, 2, 3 ஆகிய இலக்கங்களில் பொருத்தமானதைச் சுற்றி வட்டமிடவும். இவற்றில் சரி அல்லது பிழையான பதில் என்று எதுவுமில்லை. எந்த ஒரு வாக்கியத்திலும் மிக அதிகளவு நேரத்தை செலவிட வேண்டாம்.

மதிப்பிடும் அளவீடு பின்வருமாறு அமையும் : -

0 - ஒரு போதுமே எனக்கு பொருத்தமாக அமையவில்லை - **ஒருபோதும் இல்லை.**

1 - ஓரளவிற்கு அல்லது சில சமயங்களில் எனக்கு பொருத்தமாக இருந்தது - **சில வேளை**

2 - குறிபிடத்தக்க அளவுக்கு அல்லது அதிகமான வேளைகளில் பொருத்தமாக இருந்தது - **அடிக்கடி**

3 - எனக்கு அநேகமான வேளைகளில் அல்லது முற்றிலும் பொருத்தமாக இருந்தது - **அநேகமாக எப்போதும்.**

1.	எனக்கு சாதாரண நிலைக்கு மீளுவது கடினமாக இருந்தது.	0	1	2	3
2.	எனது வாய் உலர்ந்திருந்ததை உணரக்கூடியதாக இருந்துத	0	1	2	3
3.	எனக்கு நல்ல உணர்வு எதனையும் அனுபவிக்க முடியவில்லை	0	1	2	3
4.	சுவாசிப்பதில் சிரமம் இருப்பதை உணர்ந்தேன் (உ-ம் மிக வேகமான சுவாசம், உடல் களைப்பற்ற நிலையிலும் சுவாசிப்பதற்கு சிரமப்படுதல், அடிக்கடி பெருமூச்சு விடுதல்)	0	1	2	3

5.	எந்த ஒரு விடயத்தையும் தொடங்கிச் செய்வதற்கு உரிய ஊக்கம் இல்லாமலிருந்தது.	0	1	2	3
6.	சில சூழ்நிலைகளில் நான் அளவுக்கு அதிகமாக எதிர் தாக்கம் காட்ட முனைந்தேன்.	0	1	2	3
7.	நடுக்கம் ஏற்படுவதாக உணர்ந்தேன். (உ-ம்:- கைகளில்)	0	1	2	3
8.	நான் அதிகளவில் நரம்புச் சக்தியை உபயோகிக்க வேண்டியிருப்பதாக உணர்ந்தேன்.	0	1	2	3
9.	நான் அதிக பீதியடைந்து என்னை நானே ஒரு முட்டாளாக்கிக் கொள்ளக் கூடிய சந்தர்ப்பங்கள் பற்றி கவலைப்பட்டேன்.	0	1	2	3
10.	எனக்கு வாழ்கையில் எந்த எதிர்பார்ப்பும் இல்லை என்பது போல உணர்ந்தேன்.	0	1	2	3
11.	நான் கலவரமடைவதாக உணர்ந்தேன்	0	1	2	3
12.	என்னை தளர்ச்சியடையச் செய்வது கடினமாக இருந்தது.	0	1	2	3
13.	நான் கவலையாகவும் மனமுடைந்து இருப்பதாகவும் உணர்ந்தேன்.	0	1	2	3
14.	நான் செய்கின்ற விடயத்தில் வரும் எந்த ஒரு சிறிய தடையையும் என்னால் பொறுத்துக் கொள்ள முடியாமல் இருந்தது.	0	1	2	3
15.	நான் பீதி நிலையை அண்மித்து விட்டதாக உணர்ந்தேன்.	0	1	2	3
16.	எந்தவொரு விடயத்திலும் எனக்கு ஆர்வமாக ஈடுபட இயலாதிருந்தது.	0	1	2	3
17.	நான் ஒன்றுக்கும் பெறுமதி இல்லாத மனிதனாக உணர்ந்தேன்.	0	1	2	3
18.	நான் இலகுவில் மனதளவில் காயப்படுவதாக உணர்ந்தேன்.	0	1	2	3
19.	உடல் பிரயத்தனமின்றியே என் இதயத்துடிப்பினை உணர்ந்தேன். (உ-ம் : இதயத்துடிப்பு வேகம் அதிகரிப்பது, ஒரு இதயம் ஒரு துடிப்பை தவற விடுவது போலிருப்பது)	0	1	2	3
20.	பொருத்தமான காரணமெதுமின்றி எனக்கு பயம் ஏற்பட்டது.	0	1	2	3
21.	வாழ்க்கை அர்த்தமற்றது என்று உணர்ந்தேன்.	0	1	2	3

ANNEXURE – G

GUIDED IMAGERY TECHNIQUE

Introduction:

Guided imagery is a mind–body therapy that has been used for decades by individuals and in clinical settings to influence health outcomes. Guided imagery is a technique that utilizes stories or narratives to influence the images and patterns that the mind creates. Often, these stories or narratives are combined with background music. Merriam-Webster's dictionary defines guided imagery as: "any of various techniques (as a series of verbal suggestions) used to guide another person or oneself in imagining sensations and especially in visualizing an image in the mind to bring about a desired physical response (as a reduction in stress, anxiety, or pain)." Basically, guided imagery is using the imagination to create images that bring about beneficial emotional and physical effects.

Guided imagery is particularly helpful for pain management and for reducing symptoms related to anxiety, stress, and other mental health conditions in which intruding thoughts play a role in the pathology.

Guided Imagery is said to be a relaxation technique, similar to meditation and self-hypnosis that has physical and psychological effects. Promoters claim it can relax the mind and body by decreasing heart rate, lowering blood pressure, and altering brain waves. Some supporters also say that imagery can relieve pain and emotional anxiety, make drugs more effective, and provide emotional insights.

Practitioners use imagery to treat people with phobias and depression, reduce stress, increase motivation, promote relaxation, increase control over one's life, improve communication, and even to help people stop smoking. Imagery is also used in biofeedback, hypnosis, and neuro-linguistic programming.

For people with cancer, some supporters of imagery report that it can relieve nausea and vomiting from chemotherapy, relieve stress associated with having cancer, enhance the immune system, help with weight gain, combat depression and anxiety, and lessen pain.

Technique:

Guided imagery may be delivered by a practitioner, a video, or an audio recording, or conducted by an individual. A typical guided-imagery session usually begins with relaxation in which the participant takes some deep breaths and releases tension in his or her mind and body. Then, the participant starts to visualize pleasant or effective imagery that may promote healing.

Theory behind Guided Imagery:

The theory behind the use of guided imagery is that if a person can imagine negative or frightening images that increase pain or anxiety, then those images may be counteracted with positive or calming images, and the mind can be habitually trained to focus on healing imagery more often. And, if frightening or negative imagery has the ability to increase pain and other unwanted symptoms, then positive or calming imagery may lessen pain and unwanted symptoms, according to advocates of this approach.

Types:

In a review on the effects of guided imagery on outcomes, Van Kuiken described four types of guided imagery, which include

1. Pleasant imagery (imagining a calm place),
2. Physiologically focused imagery (focusing on the physiologic function that needs healing),
3. Mental rehearsal or reframing (imagining a specific task or performance before the event occurs or reframing a prior event), and
4. Receptive imagery (scanning the body to direct healing).

Procedure:

Guided imagery is an effective technique in reducing depression, anxiety and stress among cancer patients. The procedure is scheduled twice in a day with the duration of 30 minutes.

Procedure:

1. The therapy was given in a calm and quiet environment.
2. Patients were asked to lie in their supine position and close the eyes.
3. A soothing background music was used.
4. The therapy was started with deep breathing exercise for 5mts.
5. Pleasant imagery was given through verbal instructions by imagining a calm place.
6. The therapy ended with deep breathing exercise for 5mts.
7. The patients were asked to open their eyes slowly.

GUIDED IMAGERY SCRIPT USED FOR THE STUDY

Tamil:

முதல்ல கண்ணைமூடி படுத்துகோங்க .....(15 நொடிகள்)

நிதானமா மூச்சுவிடுங்க .....(20 நொடிகள்)

உங்க வாழ்க்கையில் நடந்த நீங்க கலந்துகிட்ட ஒரு சந்தோசமான நிகழ்ச்சிய அப்படியே மனசுக்குள்ளார நினச்சு பாருங்க..... (30 நொடிகள்)

அந்த சந்தோசமான நேரத்துல உங்களோடு இருந்தது யாரு? ..... (5 நொடிகள்)

அங்க என்ன பேசிட்டு இருந்தீங்க ..... (5 நொடிகள்)

நீங்க என்ன கலர் டிரஸ் போட்டிட்டு இருந்தீங்க ..... (20 நொடிகள்)

எல்லாத்தையும் அப்படியே நெனச்சு பாருங்க (3 நிமிடம்)

இப்போ உங்க நெத்திய மட்டும் மனசுக்குள்ளார கவனிச்சு பாருங்க .....(20 நொடிகள்)

வலது காதை அப்படியே கவனியுங்க .....(10 நொடிகள்)

இப்போ வலது கண்ணை அப்படியே கவனியுங்க .....(20 நொடிகள்)

மூக்கை மட்டும் கவனியுங்க .....(10 நொடிகள்)

இப்போ இடது கண்ணை அப்படியே கவனியுங்க .....(15 நொடிகள்)

இடது காதை மட்டும் கவனியுங்க .....(10 நொடிகள்)

இப்போ வாயை மட்டும் கவனியுங்க .....(10 நொடிகள்)

இப்போ முகத்த மட்டும் அப்படியே மனசுக்குள்ளாற கவனிச்சு பாருங்க .....

(20 நொடிகள்)

இப்போ வலது தோல்ல இருந்து மெதுவா முழுங்கை உள்ளங்கை விரல்கள் வரைக்கும் கவனிச்சு பாருங்க .....(15 நொடிகள்)

அடுத்த இடது தோல்ல இருந்து மெதுவா முழங்கை உள்ளங்கை விரல்கள் வரைக்கும் கவனிச்சு பாருங்கா .....(15 நொடிகள்)

இப்போ கழுத்துல இருந்து இடுப்பு வரைக்கும் கவனிச்சு பாருங்க ..... (20 நொடிகள்)

நெஞ்சை மட்டும் கவனியுங்க .....(10 நொடிகள்)

வயிறை மட்டும் கவனியுங்க .....(10 நொடிகள்)

வலது தொடைல இருந்து முழங்கால் பாதம் விரல்கள் வரைக்கும் மெதுவா கவனியுங்க .....(15 நொடிகள்)

இப்போ இடது தொடைல இருந்து முழங்கால் பாதம் விரல்கள் வரைக்கும் மெதுவா கவனியுங்க .....(15 நொடிகள்)

இப்போ இரண்டு காலையும் அப்படியே கவனிச்சு பாருங்க .....

(30 நொடிகள்)

மறுபடியும் நிதானமா மூச்சுவிடுங்க .....(1 நிமிடம்)

இப்போ நீங்க ஒரு பசுமையான தோட்டத்துக்கு முன்னாடி நின்னுட்டு இருக்கிங்க.....(5 நொடிகள்)

கண்ணுக்கு தெரிஞ்சவரைக்கும் ஒரே பசுமையா இருக்கு .....

(10 நொடிகள்)

நீங்க மெதுவா அப்படியே நடந்துவாங்க .....(10 நொடிகள்)

கால் ரொம்ப மெத்துனு இருக்கு .....(20 நொடிகள்)

அந்தத்தோட்டத்துல இருக்கற விதவிதமான கலர் கலரான பூவையெல்லாம் அப்படியே பாருங்க .....(2 நிமிடம்)

இப்போ அந்த தோட்டத்துல அப்படியே படுத்துகுங்க

10..... (10 நொடிகள்) 9..... (10 நொடிகள்) 8..... (10 நொடிகள்) 7..... (10 நொடிகள்) 6..... (10 நொடிகள்)

உடல் முழுக்க தளர்வா இருக்கு .....(10 நொடிகள்)

மனசு ரொம்ப அமைதியா இருக்கு .....(10 நொடிகள்)

ரத்த ஓட்டம் ஒரே சீரா ஒடிக்கிட்டு இருக்கு .....(20 நொடிகள்)

ரத்த ஓட்டம் ஒரே சீரா இருக்கு

5..... (10 நொடிகள்) 4..... (10 நொடிகள்) 3..... (10 நொடிகள்) 2..... (10 நொடிகள்) 1..... (10 நொடிகள்)

அமைதியா படுத்திருக்கீங்க

ஒவ்வொர் உறுப்பும் அமைதியா இருக்கு .....(5 நொடிகள்)

அமைதியாக இருக்கீங்க .....(30 நொடிகள்)

1..... (10 நொடிகள்) 2..... (10 நொடிகள்) 3.....

(10 நொடிகள்)

கண்ணை திறக்கலாம்.

English:

Firstly lie down and close your eyes…….. (15 Seconds)

Breathe slowly…….. (20 Seconds)

Now imagine in your mind a happy moment in your life you were a part of. ……

(30 Seconds)

In that happy moment who was with you?..... (10 Seconds)

What were you talking?..... (10 Seconds)

What color dress were you wearing?..... (20 Seconds)

Think about all these things for a moment…… (3 Minutes)

Now concentrate only your forehead in your mind…… (20 Seconds)

Concentrate on your right ear now…….. (10 Seconds)

Now concentrate on your right eye alone ……..…….. (20 Seconds)

Closely concentrate on your nose now…… (20 Seconds)

Now concentrate only on your left eye for few minutes…… (10 Seconds)

Concentrate on your left ear for some time…… (10 Seconds)

Now concentrate only on your mouth……. (10 Seconds)

Now concentrate on your face in your mind……..…….. (20 Seconds)

Now concentrate on your right hand all the way from your shoulder sliding down through your forearm till your fingers…… (15 Seconds)

Now concentrate on your left hand all the way from your shoulder sliding down through your forearm till your fingers…… (15 Seconds)

Now focus on your neck all the way down to your hip…… (20 Seconds)

Now contemplate only on your chest…… (10 Seconds)

Concentrate only on your stomach now…… (10 Seconds)

Now give attention to your right leg beginning from thigh all through your knees all the way down to toes…… (15 Seconds)

Now give attention to your left leg beginning from thigh all through your knees all the way down to toes…… (15 Seconds)

Again breathe slowly…… (1 Minute)

Imagine yourself standing in front of a fresh garden…… (10 Seconds)

Everything in the garden is fresh within your eyes s reach……(10 Seconds)

Slowly walk through the garden…….. (10 Seconds)

Feel the softness of the ground in your feet…….(20 Seconds)

See the different colored flowers of the garden…….(2 Minutes)

Lie down on your back in that garden…….. (20 Seconds)

10…… (10 Seconds) 9…… (10 Seconds)

8……..(10 Seconds) 7……..... (10 Seconds)

6…… (10 Seconds)

Your whole body is relaxed now…… (10 Seconds)

Your mind is at peace…… (10 Seconds)

Your blood flow is slow and steady…… (20 Seconds)

5 …… (10 Seconds)

4…….(10 Seconds)

3…….. (10 Seconds)

2…… (10 Seconds)

1 …….. (10 Seconds)

You are lying down completely relaxed…….(10 Seconds)

Each and every organ is calm…….(10 Seconds)

You are calm and relaxed…….(10 Seconds)

Your whole body is calm and relaxed…… (10 Seconds)

1…… (10 Seconds) 2…… (10 Seconds) 3……(10 Seconds)

Slowly open your eyes…….

ANNEXURE – H

PHOTOGRAPHS SHOWING CANCER PATIENTS RECEIVING GUIDED IMAGERY THERAPY

GROUP - 1

GROUP - 2

GROUP - 3